

## Due Diligence and Valuation Report

Arrowhead Code: 40-01-04  
 Coverage initiated: 06 October 2016  
 This document: 18 September 2017  
 Fair share value bracket € 35.58 and € 39.05  
 Share price (18-Sep-17): € 31.70

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### Market Data

52-Week Range<sup>i</sup>: € 17.02 - € 33.99  
 Average Daily Volume<sup>ii</sup>: 24,171  
 Market Cap. (18-Sep-17): € 649.0 MM

### Financial Forecast (in €) (FY ending - Dec)

€ MM	'17E	'18E	'19E	'20E	'21E	'22E	'23E
High EBIT	57.0	77.9	81.1	86.8	96.2	105.0	113.6
High NI	22.7	40.1	42.8	47.2	54.4	61.5	68.5
High EPS	1.11	1.96	2.09	2.30	2.66	3.00	3.34
Low EBIT	53.5	74.0	77.7	83.0	92.0	101.0	110.0
Low NI	20.3	37.3	40.4	44.5	51.4	58.7	66.0
Low EPS	0.99	1.82	1.98	2.18	2.51	2.87	3.22

**Company Overview:** Mersen SA (herein referred to as "Mersen SA", "Mersen", or "the group") is a France-based manufacturer of graphite equipment and a provider of electrical solutions. Mersen operates under two segments namely - Advanced Material (graphite specialties for high temperature application, anti-corrosion equipment for chemicals, and power transmission technologies) and Electrical Power (solutions for power management and electrical protection and control that are focused on electrical market). The group's geographical footprint spans across five continents. Mersen SA, formed in 1892, is currently listed on Euronext Paris where it trades under the stock symbol of "MRN".

**In H1 2017,** Mersen registered an increase of 4.9% YoY with Electrical Power grew by 3.2% YoY and Advanced Materials grew by 6.2% YoY. Total sales grew by 6.4% YoY from € 387.2 MM in H1 2016 to € 412.0 MM with Electrical Power growth of 4.6% YoY from € 176.7 MM in H1 2016 to € 184.8 MM in H1 2017 and Advanced Materials grew by 7.9% YoY from € 210.5 MM in H1 2016 to € 227.2 MM in H1 2017. The operating margin before non-recurring items stood at 8.9% in H1 2017 vis-a-vis 7.7% in H1 2016; for Advanced Materials, it was 11.1% in H1 2017 vis-à-vis 7.9% in H1 2016 while for Electrical Power it was 10.3% in H1 2017 vis-à-vis 11.5% in H1 2016.<sup>iii</sup>



Company: Mersen SA  
 Ticker: EPA: MRN  
 Headquarters: Paris, France  
 CEO: Dr. Luc Themelin  
 CFO: Mr. Thomas Baumgartner  
 Chairman: Mr. Olivier Legrain  
 Website: <https://www.mersen.com/>

Arrowhead is updating coverage on Mersen SA with a fair value bracket of € 35.58 (Low-Bracket estimate) and € 39.05 (High-Bracket estimate).

**Key Highlights:** (1) The company completed implementation of its "Transform Plan" in 2015, which aimed to rationalize the group's focus and efforts to better respond and align to the needs of the rapidly changing target markets<sup>iv</sup>; (2) Under the plan the group reallocated production within geographies and resized its facilities. (3) With effect from January 1, 2016, Mersen realigned its organizational structure into two new segments - Advanced Materials and Electrical Power, where it holds leadership or joint leadership position; (4) The group has a strong worldwide footprint, with operations spread across 35 countries; (5) Mersen has a strong and diverse client portfolio including Airbus, Boeing, Samsung, Siemens and Bombardier; (6) The group acquired 13 companies in the last ten years to strengthen its position, broadening and extending its offerings with each acquisition; (7) The company stepped up its operational excellence plan in September 2016 with the aim of reorganizing manufacturing units to address chemicals market and some product lines of Electrical Power. The plan is expected to result in € 42-45 MM in savings by 2018 with € 16.5 MM achieved in 2016; (8) On July 28, 2017, the Company released its H1 2017 results wherein the company registered a strong growth in organic sales and improvement of operating margin; (9) Dividend payout of € 0.50 per share in July 2016; (10) FY 2016 figures have been restated to reflect the reclassification.

**Key Risks:** Key risks include intense competition in the industry and unfavorable global economic environment.

**Valuation and Assumptions:** Based on due diligence and valuation estimates, Arrowhead believes that Mersen's fair share value lies in the € 35.58 - € 39.05 bracket. We have valued the company using the Blended valuation method, with equal weightage to Discounted Cash Flow method and EV/EBITDA multiple based valuation. Our DCF model suggests fair value bracket of € 34.71 to € 37.17, while relative valuation provides fair value of € 36.46 to € 40.94.

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## 1. Summary and Outlook

We update coverage on Mersen SA. Headquartered in Paris, France, Mersen is a leading manufacturer of graphite equipment and a provider of electrical solutions. The group operates through two segments, namely Advanced Material and Electrical Power, and serves mainly five industries – Energy, Electronics, Transportation, Process, and Chemicals and Pharmaceuticals industries.

### Key Highlights:

- (1) The group adopted the “Transform Plan” in 2014 to rationalize the company’s focus and efforts to better respond and align to the needs of the rapidly changing target markets. The plan was completed by the end of 2015<sup>vi</sup>. Under the plan, Mersen reallocated production within geographies and resized its facilities.
- (2) On December 2, 2015, Mersen announced changes to its business structure, to concentrate on key areas of expertise, innovation and growth market. Effective January 1, 2016, the group's organizational structure was divided into two new segments<sup>vii</sup> – Advanced Materials and Electrical Power, where it holds leadership or joint leadership position in most of the end user industries its operates in.
- (3) The Advanced Material segment comprises of three businesses focused toward carbon materials, namely graphite specialties for high temperature application, anti-corrosion equipment for chemicals, and power transmission technologies. The Electrical Power segment combines two businesses – solutions for power management and electrical protection and control, focused on electrical market.
- (4) The group prides over its strong product portfolio. The group is one of the major manufacturers of isostatic graphite in the world. The expertise in its areas of operations, strong knowledge and close relations with world’s leading industrial group acts as a significant entry barrier making it difficult for new players to enter the market.
- (5) Mersen has a strong worldwide footprint, with operations across 35 countries. This enables the company to respond quickly to customer needs and concerns.
- (6) The company has a strong and diverse customer portfolio<sup>viii</sup>, including but not limited to, Airbus Defense and Space (one of the top 10 defense companies worldwide), Samsung, BASF (the largest chemical producer in the world), Bombardier (a Fortune 500 conglomerate), Hitachi, Holcim-Lafarge, Mitsubishi, Siemens, Schneider, Arcelor Mittal. The group is also the preferred supplier of graphite components to Applied Varian, a major supplier of ion implantation equipment used in the fabrication of semiconductor chips.
- (7) Driven by an acquisition led growth strategy, Mersen has acquired 13 companies in the last 10 years to strengthen its position in the developing markets. Each new acquisition broadens and extends the group’s product offerings and expand its footprints. The company acquired Cirprotec in 2014 (world leaders in IEC surge protection) and ASP in 2015 (a leading Chinese company in Surge Protection Devices).
- (8) In September 2016, the company stepped up its operational excellence plan with the aim of reorganizing manufacturing units and is expected to improve competitiveness by reducing purchasing cost, lean manufacturing and reducing fixed cost. The plan is expected to cost € 32 MM of which € 22 MM is already incurred in 2016. The plan achieved cost savings of € 16.5 MM in 2016 and is expected to result in total savings of € 42-45 MM by 2018.
- (9) The income statement and cash-flows for December 2015 have been restated following the (a) reclassification of net financial interest on staff benefits under ‘financial income’ and (b) the classification of the Saint-Loup-de-Naud business under ‘operations held for sale/discontinued’.
- (10) InH1 2017, Mersen registered organic sales growth of 4.9% wherein Electrical Power organic sales grew by 3.2% and Advanced Material organic sales rose by 6.2%. Advanced Materials and Electrical Power contributed 55% and 45% to the top-line, respectively.
- (11) Operating Margin before non-recurring items improved to 8.9% in H1 2017 compared to 7.7% in H1 2016. For Advanced Materials, the parameter grew to 11.1% in H1 2017 from 7.9% in H1 2016 driven by higher volume and significant productivity gains. However, for Electrical Power, the parameter declined from 11.5% in H1 2016 to 10.3% in H1 2017 due to unfavorable mix effects, pricing pressure and limited gain from competitiveness plans.
- (12) Growth in net income from € 12.3 MM in H1 2016 to € 19.1 MM in H1 2017 driven primarily from more than 31% growth in operating sales due improved top-line.
- (13) Robust Balance sheet with improvement in leverage and gearing ratios wherein net debt to EBITDA went down from 2.2 in H1 2016 to 1.8 in H1 2017 and net debt to equity went down from 46% in H1 2016 to 42% at end of H1 2017. Further, the company extended the maturities of its multi-currency syndicated loan

from July 2019 to July 2022, basis this the average maturity of the external borrowings increased from 3.4 years previously to 5.1 years now.

- (14) In H1 2017, Mersen generated 35% of its revenues from North America, 33% from Europe, 27% from Asia and 4% from South America and Africa<sup>ix</sup>. Strong organic sales growth of 18.7% in Asia-Pacific region was driven by dynamic situation in India, China and Japan driven by Company's positioning in the renewable energies, electronics and process industries. European region showed an improvement in H1 2017 due to solid performance in aeronautics, chemicals and power electronics. North American region also witnessed slight improvement due to growth in electronics, oil & gas and process industries.
- (15) In H1 2017, Process industry continued to remain the largest contributor to the revenue at 35%, followed by Energy at 19%, Electronics at 19%, Transportation at 17%, and lastly Chemicals at 10%.

**Key Risks:** Key risks include intense competition and unfavorable global economic environment<sup>x</sup>.

**Industry Overview:** In 2015, the world continued to witness significant macro-economic headwinds to global economic recovery. The global economic growth remained sluggish in 2015, with GDP growth rate of 3.1% compared to IMF estimate of 3.5% at the start of the year<sup>xi</sup>. Once the engine of global growth, emerging market economies cracked under the pressure of lower demand from major economies, low commodity prices and shale revolution. According to United Nations Industrial Development Organization (UNIDO), global manufacturing production increased merely 2.8% in 2015 as developing and emerging industrial economies registered low growth rates because falling commodity prices and adverse conditions for external finances<sup>xii</sup>. Going forward, manufacturers worldwide are refocusing on growth. The results of the Global Manufacturing Outlook Survey for 2016 conducted by KPMG<sup>xiii</sup> showed that 74% of surveyed manufacturers reprioritized growth and 56% of the respondents were looking forward to entering new geographic markets. The survey also revealed that 49% of manufacturers plan to invest more than 6% of their revenue on R&D over the next two years, while 34% have already invested at least 6% of their revenues on R&D.

## 2. Business Overview:

Based out of Paris, France, Mersen SA (formerly Le Carbone Lorraine SA), founded in 1982, is presently engaged in materials and electricals business worldwide. The group primarily produces graphite equipment, metal equipment and electrical equipment. The group's operating segments are Advanced Material segment and Electrical Power segment.

Mersen restructured its operating divisions in late 2015, leading to the reclassification of its business activities that were earlier classified as The Advanced Materials and Technologies (AMT - Materials) and The Electrical Components and Technologies (ECT - Electrical)<sup>xiv</sup>. AMT Materials specialized in the usage of graphite and other high-performance materials in highly demanding industrial environments, whereas ECT Electrical was focused toward electrical solutions and services for motors and generators, enhancing the safety and performance of electric installations and power electronics. The group executed the "Transform Plan" in its entirety by end of December 2015, which saw the company reallocating production within geographies and resizing facilities. The execution of the "Transform Plan" made the restructuring possible. The restructuring enables the group to align its focus and efforts in a better manner to respond to the needs of its target markets.

In-line, Mersen also announced changes to its organizational structure to concentrate on key areas of expertise, innovation and growth market. Effective January 1, 2016, the company's organizational structure is aligned in accordance with the two new segments, wherein it holds leadership or joint leadership position<sup>xv</sup>, namely:

- **Advanced Material segment**, which comprises three businesses is focused toward carbon materials such as graphite specialties for high temperature application, anti-corrosion equipment for chemicals, and power transmission technologies.
- **Electrical Power segment**, which brings together two businesses - solutions for power management and electrical protection and control focused on the electrical market.

<b>Exhibit 1: Products in which Mersen holds leadership position<sup>xvi</sup></b>	
<b>Rank</b>	<b>Products</b>
<b>The Advanced Material segment</b>	
<b>#1</b>	<ul style="list-style-type: none"> <li>Graphite based anti-corrosion equipment</li> <li>Brushes and brush holders for industrial electric motors</li> </ul>
<b>#2</b>	<ul style="list-style-type: none"> <li>High-Temperature isostatic graphite applications</li> </ul>
<b>The Electrical Power segment</b>	
<b>#1</b>	<ul style="list-style-type: none"> <li>Supply of passive power electronics components</li> </ul>
<b>#2</b>	<ul style="list-style-type: none"> <li>Industrial fuses</li> </ul>

## 2.1 Company History

<b>Exhibit 2: Mersen's History<sup>xvii</sup></b>	
<b>Year</b>	<b>Events</b>
<b>1891</b>	<ul style="list-style-type: none"> <li>The Fabius Henrion plant (Lorraine) was built</li> </ul>
<b>1892</b>	<ul style="list-style-type: none"> <li>Le Carbone was founded in Paris for manufacturing brushes for motors</li> </ul>
<b>1893</b>	<ul style="list-style-type: none"> <li>Graphitization process was discovered by Le Carbone</li> <li>The Pagny sur Moselle plant of Fabius Henrion was built</li> </ul>
<b>1897</b>	<ul style="list-style-type: none"> <li>Le Carbone set up its first international subsidiary in Germany</li> </ul>
<b>1906</b>	<ul style="list-style-type: none"> <li>Le Carbone deployed first team in the United States</li> </ul>
<b>1915</b>	<ul style="list-style-type: none"> <li>Pagny sur Moselle plant is destroyed during World War I</li> </ul>
<b>1927</b>	<ul style="list-style-type: none"> <li>Fabius Henrion became Compagnie Lorraine de Charbons pour l'Electricite</li> </ul>
<b>1937</b>	<ul style="list-style-type: none"> <li>Le Carbone and Compagnie Lorraine de Charbons pour l'Electricite merge to form Groupe Carbone Lorraine</li> </ul>
<b>1950</b>	<ul style="list-style-type: none"> <li>Le Carbone Lorraine took over the worldwide distribution of products for Ferraz, an industrial fuse manufacturer based in Lyon</li> </ul>
<b>1953</b>	<ul style="list-style-type: none"> <li>The chemical engineering business of the company was started in Pagny sur Moselle</li> </ul>
<b>1961</b>	<ul style="list-style-type: none"> <li>The Amiens plant was built to manufacture carbon brushes for electric motors</li> </ul>
<b>1985</b>	<ul style="list-style-type: none"> <li>Ferraz was acquired</li> </ul>
<b>1988</b>	<ul style="list-style-type: none"> <li>Pechiney moves above 50% ownership mark. The industrial seal business was transferred to Carbone Lorraine</li> </ul>
<b>1991</b>	<ul style="list-style-type: none"> <li>Stackpole's electrical and high temperature application assets were acquired</li> </ul>
<b>1996</b>	<ul style="list-style-type: none"> <li>Pechiney exits Carbone Lorraine</li> </ul>
<b>1998</b>	<ul style="list-style-type: none"> <li>Cooling system units were set up</li> </ul>

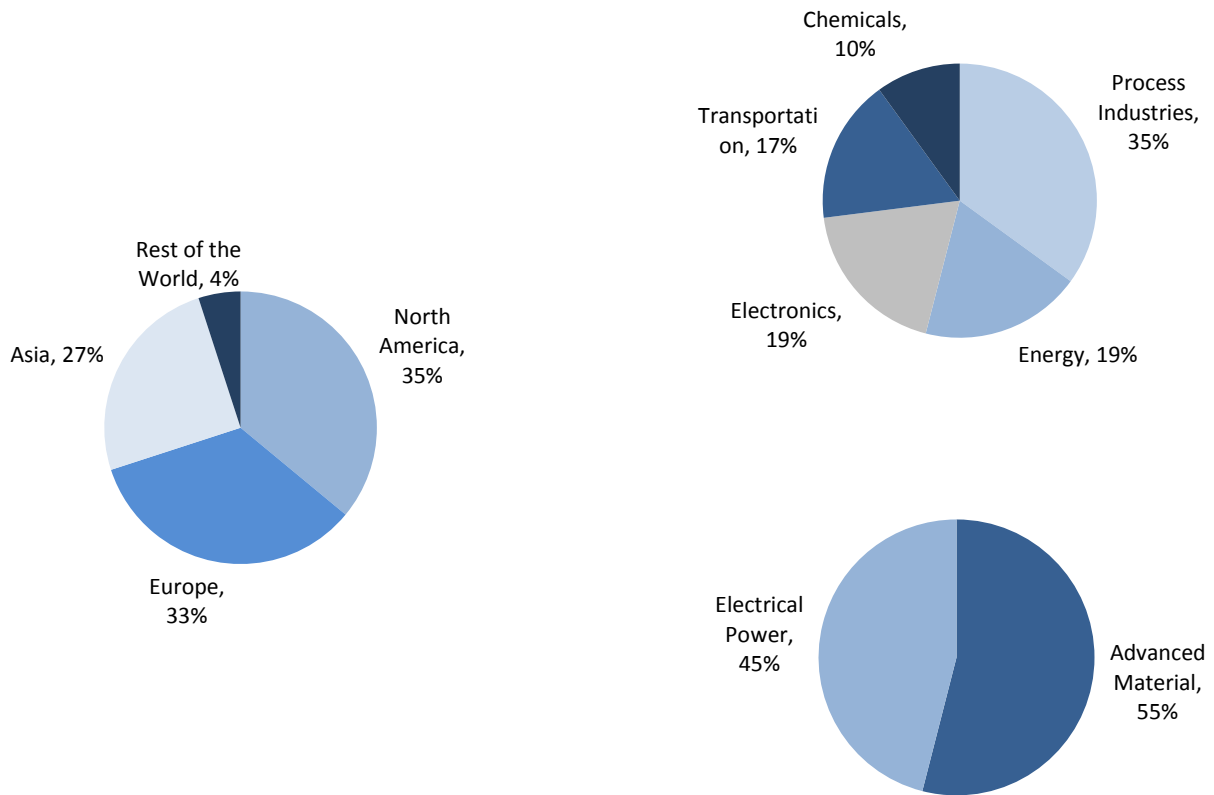
<b>1999</b>	<ul style="list-style-type: none"> <li>Gould-Shawmut group's electrical protection division was acquired</li> </ul>
<b>2005</b>	<ul style="list-style-type: none"> <li>First solar and wind energy sales was recorded</li> <li>The magnets division for automobile applications was sold</li> </ul>
<b>2006</b>	<ul style="list-style-type: none"> <li>R-Theta was acquired to strengthen position in power electronics</li> </ul>
<b>2007</b>	<ul style="list-style-type: none"> <li>The group's first manufacturing facility in China was inaugurated in Chongqing</li> </ul>
<b>2008</b>	<ul style="list-style-type: none"> <li>The group made its first acquisition in China by buying Xianda and Mingrong electrical protection</li> <li>The rail and motorcycle breaking business was divested</li> <li>The group bought Calcarb, one of the world leaders in rigid carbon felts</li> </ul>
<b>2009</b>	<ul style="list-style-type: none"> <li>The brushes for automobile and household electrical appliances division were sold</li> </ul>
<b>2010</b>	<ul style="list-style-type: none"> <li>A majority shareholding in silicon carbide specialist, Boostec, was acquired</li> <li>A majority shareholding in Yantai was acquired to strengthen the company position in solar energy</li> <li>Carbone Lorraine changed its name to Mersen</li> </ul>
<b>2011</b>	<ul style="list-style-type: none"> <li>The company acquired Eldre, the world's largest pure player in laminated Busbars</li> </ul>
<b>2014</b>	<ul style="list-style-type: none"> <li>Majority stake in lightning and overvoltage protection specialist, Cirprotec, was acquired</li> </ul>
<b>2015</b>	<ul style="list-style-type: none"> <li>ASP, a Chinese leader in overvoltage protection, was acquired</li> </ul>
<b>2016</b>	<ul style="list-style-type: none"> <li>Announced stepping up of operational excellence plan, will reduce the Group's cost base by € 42-45 MM by 2018 with € 16.5 MM already achieved in 2016</li> <li>Mersen entered a JV with Harbin Electric Carbon in China as part of Group's expansion strategy in Asia</li> </ul>
<b>2017</b>	<ul style="list-style-type: none"> <li>Mersen received and accepted to sell its switch and contactor business to a French manufacturer. The impact of assets held for sale would be reflected in H2 2017 in the financial statements</li> </ul>

## 2.2 Business Model

A technical and technologically driven company, Mersen is a manufacturer of materials and equipment that can withstand extreme environments. The company also manufactures safe and reliable electrical equipment like surge protection devices, fuses, fuse gears and cooling devices. Mersen specializes in designing expert and innovative solutions to meet specific needs that enables its clients across industries to optimize their manufacturing processes. Sectors such as energy, transportation, electronics, pharmaceutical, chemical and processes are Mersen's key target industries. Geographically, the company is well positioned to cater to customers across North America, Europe, Asia, South America and Africa.



**Exhibit 3: Revenue by Segment and Geography, H1 2017<sup>xviii</sup>**



A leading player in its focus markets, Mersen classifies its offerings under two key segments – Advanced Materials and Electrical Power. The present segment categorization came to effect from January 1, 2016. The reorganization is aimed at optimizing the group’s industrial and human resources, while better aligning its business interests to the needs of the different end user markets. This restructuring was made possible by the successful execution of the “Transform Plan” in December 2015. In September 2016, the company stepped up its operational excellence plan with the aim of reorganizing its manufacturing units to address the chemicals market and certain product lines of Electrical Power segment. This would entail termination of around 130 positions in France at the Pagny sur Moselle and Saint Bonnet de Mure sites. Overall, the Operational Excellence plan is expected to cost € 32 MM with € 22 MM incurred in 2016 and € 10 MM expected to be incurred in 2017. The plan is expected to improve competitiveness by reducing purchasing cost, lean manufacturing and reducing fixed cost. In 2016, the result was reduction in fixed cost by 5% and reduction in inventory by € 16 MM on like-for-like basis. The plan is expected to reduce cost base by € 42-45 MM by 2018 with cost saving of € 16.5 MM already achieved in 2016.

**2.2.1 Advanced Materials**

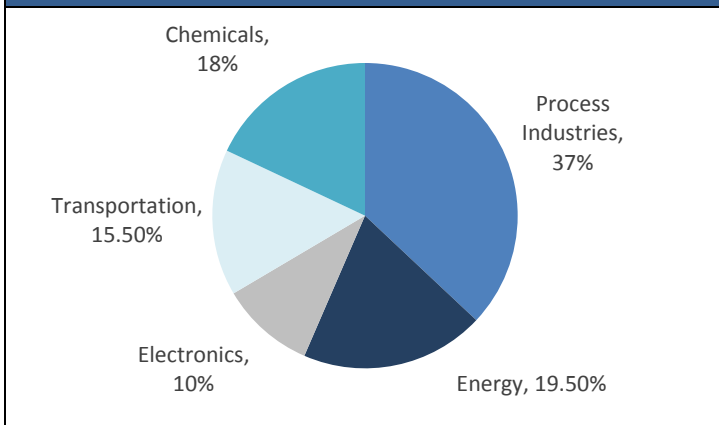
Advanced Materials segment offerings include a wide range of products based on carbon and high performance materials, which can withstand resistance to extreme environments requiring high temperatures and corrosion. The products are largely made of graphite and reactive metals, which can withstand demanding process constraints such as corrosion, high pressure and high temperature. The group also offers products for power transfer under the power transfer technologies sub segment. The focus is on graphite products for high-temperature applications, anti-corrosion equipment designed primarily for chemicals, and power transmission technologies including signal transfer systems.

**Exhibit 4: Advanced Materials: Product and Service Portfolio<sup>xix</sup>**

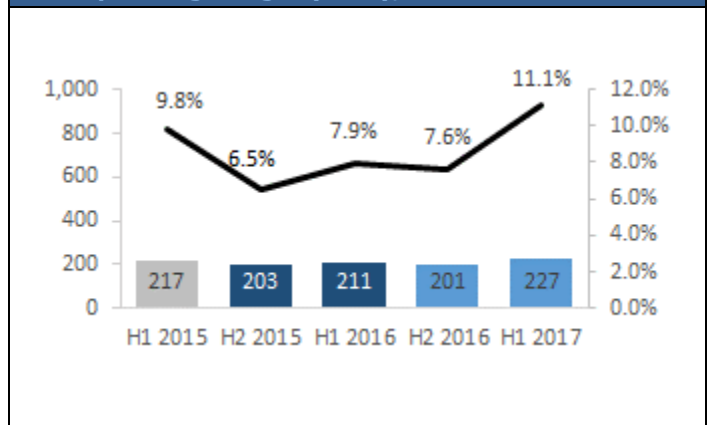
Resistance to High Temperatures	<ul style="list-style-type: none"> <li>• High temperature thermal insulation carbon felt</li> <li>• Purified and coated graphite parts</li> <li>• Sintered silicon carbide products</li> <li>• Carbon/carbon composite products</li> </ul>
Resistance to Corrosion	<ul style="list-style-type: none"> <li>• Pressure vessels</li> <li>• Columns</li> <li>• Heat exchangers</li> <li>• HCl anticorrosion systems</li> </ul>
Power Transmission Technologies	<ul style="list-style-type: none"> <li>• Carbon brushes and brush-holders</li> <li>• Slip ring assemblies</li> <li>• Signal transfer systems</li> </ul>

In this segment, the company holds market leadership globally in graphite based anti-corrosion equipment and brushes, and brush-holders for industrial electric motors. Mersen is also the second leading player worldwide in the category of high temperature isostatic graphite applications. The segment faces strong competition from German based companies such as SGL Carbon (graphite specialties) and Schunk (graphite); Japanese firms, such as Toyo Tanso (isostatic graphite) and Tokai Carbon (fine carbon); and UK firms, such as Morgan advanced material (power transmission technologies). This segment contributes ~54% of total company sales. Mersen’s expansion strategy for the segment is focused toward organic growth, coupled with targeted investments, mainly focused in the solar energy and electronics verticals.

**Exhibit 5: Advanced Materials: Revenue Distribution in H1 2017<sup>xx</sup>**



**Exhibit 6: Advanced Materials: Revenue (in € MM) and Operating Margin (in %), H1 2017<sup>xxi</sup>**



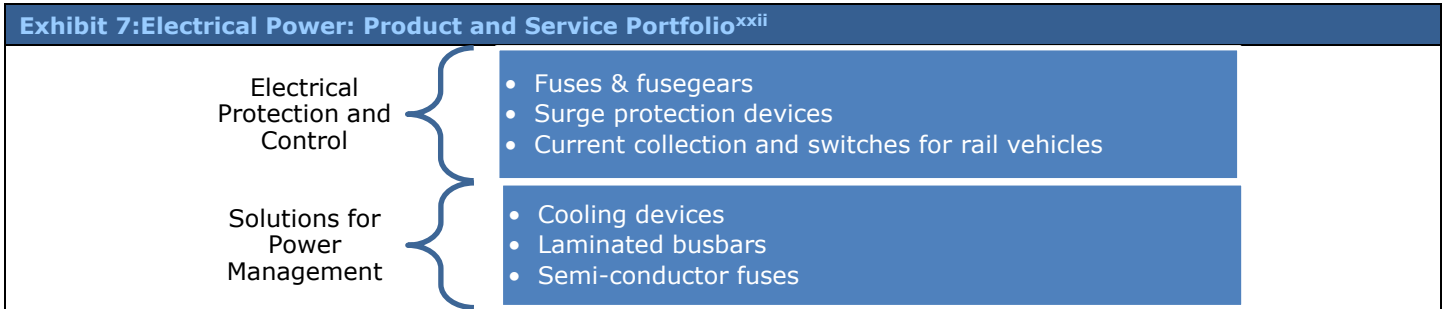
Advanced Materials reported a 7.9% YoY growth in total sales during H1 2017 at € 227.2MM vis-à-vis € 210.5MM in H1 2016. The increase in revenue was mainly led by the strong growth in the electronics, aeronautics, chemicals and process industries markets. On an organic basis, the growth was 6.2% in H1 2017 YoY. Operating margin for the segment increased from 7.9% in H1 2016 to 11.1% in H1 2017 driven by higher volume and significant productivity gains.

**2.2.2 Electrical Power**

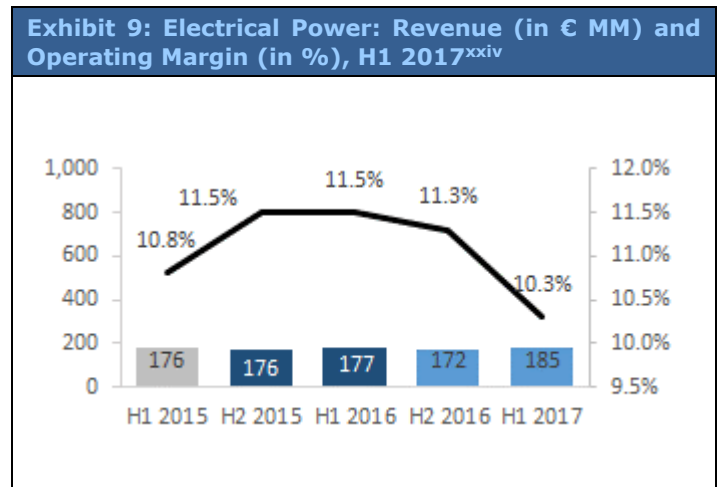
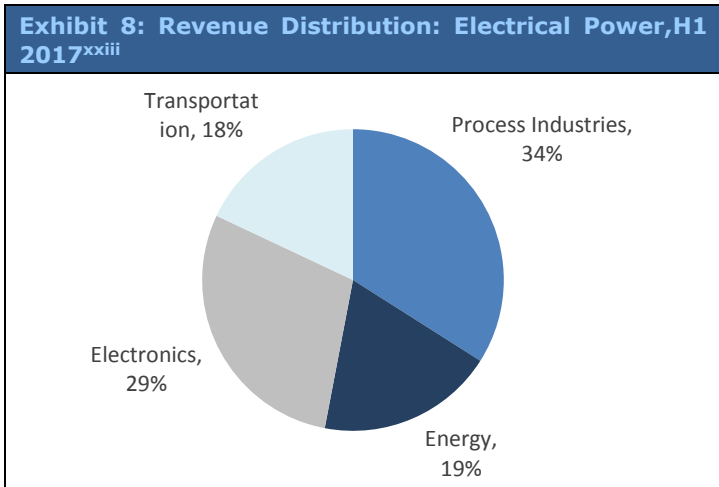
The Electrical Power segment deals in electrical solutions and services for power management (mainly for power electronics) and electrical protection and control. The products and solutions offered to clients in this segment are geared toward ensuring efficient operation of power generation and distribution systems, and effective utilization of production facilities. The portfolio offerings include comprehensive line of fuses, fuse gears and fuse systems, and



surge protection devices. Mersen switches meet the needs of several demanding industries including industrial controls, power distribution and renewable energy, power generation, research labs, chemical industries, etc.



In the Electrical Power segment, Mersen is the market leader in the supply of passive power electronics components, while it is the second largest supplier worldwide for industrial fuses. The company’s key competitors in this segment include Eaton / Cooper Industries (fuses) and Rogers (laminated busbars). With a contribution of ~46% to the topline, Mersen’s growth strategy in this segment includes maximizing mature products, while expanding on growth products through path breaking innovations and bolt-on acquisitions. Mature products comprise of fuses, fuse-gears, which hold strong market share and optimized manufacturing capabilities.



Electric Power segment reported total sales growth of 4.6% YoY during H1 2017 at € 184.8 MM vis-à-vis € 176.7 MM in H1 2016, driven by gains in the process industries and power electronics markets, whereas electrical distribution continued to lag. Also, on an organic basis, there was an increase in top-line by of 3.2% in H1 2017 vis-à-vis H1 2016 in the segment.

Operating margin for the Electrical Power segment contracted from 11.5% in H1 2016 to 10.3% in H1 2016, due to unfavorable mix effects, pricing pressure and limited gain from competitiveness plans

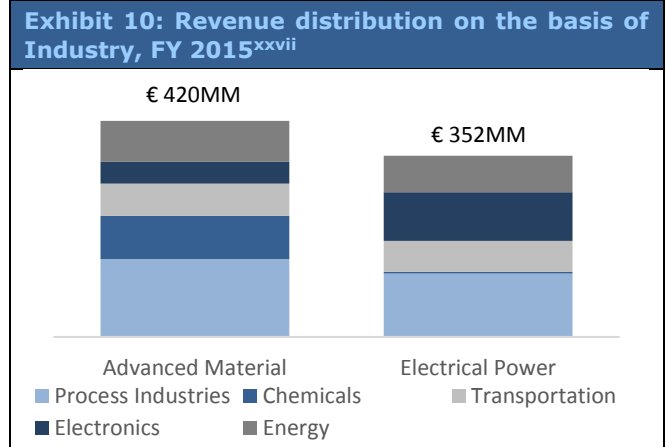
**2.2.3 Strong Product Portfolio<sup>xxv</sup>**

The group offers a wide variety of products and solutions to industrial companies worldwide to enhance their product performance. Mersen is one of the major manufacturers of isostatic graphite. Manufacturing isostatic graphite is fraught with complex production procedures which makes it difficult for any new player to enter the market. In addition, Mersen offers a wide product range in its Electrical Power segment adhering to standards set by various markets including US and China.

Moreover, the company enjoys close relationships with world’s leading industrial group and strong expertise in its segments of operation. This acts as a strong entry barrier, barring new players from entering the market.

**2.3 Industries Catered<sup>xxvi</sup>**

The markets Mersen caters to through its two segments, Advanced Materials and Electrical Power, are mainly driven by end-user industries. Leveraging its expertise in both the segments, Mersen’s portfolio offerings is quite exhaustive and geared toward serving markets that address the challenges of energy efficiency and demographic growth. Key focus industries for the company’s products and solutions are Chemical, Process, Transportation, Electronics and Energy. In FY 2015, the Advanced Material segment generated € 420MM sales and Electrical Power generated € 352 MM. The Process Industry was the largest contributor to the sales and accounted for ~35% sales of both Advanced Material segment and Electrical Power segment. In 2016, Process industry continued to remain the largest contributor to the revenue at 35%, followed by Energy at 19%, Electronics at 19%, Transportation at 17%, and lastly Chemicals at 10%.



- 1. Energy<sup>xxix</sup>:** Mersen develops solutions to address the needs of conventional sources of energy, along with alternative energy sources, such as renewable energy. The company’s conventional energy solutions are mainly focused on power generation and power conversion, where it holds expertise in re-engineering existing solutions, along with creating maintenance tools to improve overall performance. A strong player, Mersen has a diversified client base in the conventional energy market, comprising of motor and generator manufacturers (ABB, Alstom, Siemens, and General Electric) and distribution system operators (EDF). In the conventional energy installation segment, the company offers a wide range of solutions, including equipment for thermal power stations, for

**Exhibit 11: Mersen’s Solar Cell Manufacturing Offerings<sup>xxviii</sup>**

<b>Manufacture of polysilicon</b>	Complex graphite components & equipment
<b>Ingot production</b>	Furnace linings, machined graphite parts, furnace insulation
<b>Doping &amp; surface treatments</b>	Graphite and composite material equipment
<b>Solar panels power protection</b>	Fuses, fuse gears, electronic systems, surge protection devices, combiner boxes
<b>Power conversion</b>	Cooling devices, laminated busbars, fuses



which it is a leading supplier.

In the alternative energy segment, Mersen is also working toward developing cost effective technological solutions, which can increase efficiency in the manufacturing process for renewable energy. Among the new

renewable energy sources, solar energy is a strong focus area for the company. Mersen offers a host of solutions across the value chain of the complex solar cell manufacturing process. In addition, it also provides a full range of products and solutions for the conversion and distribution of photovoltaic energy and for the protection of installations. By the end of 2015, Mersen also become the first company to offer a complete range of protection components for 1500V DC applications. The company's growth strategy in the solar space is to further consolidate its market position by supporting polysilicon manufacturers development projects, mainly in the US and Chinese region.

Wind energy is another strong market within the energy domain for Mersen, wherein it provides solutions for energy conversion and distribution, electricity generation, and electrical protection. The group also develops maintenance services to optimize wind energy production. These services include technical diagnostics, equipment verification, installation and replacement of components.

Exhibit 13: Mersen's Wind Power Industry Offerings <sup>xxxix</sup>	
<b>Blade Orientation</b>	Signal transmission systems, brush and brush holders
<b>Power Generation</b>	Slip ring assemblies, brushes and brush-holders
<b>Power Distribution</b>	Fuses and fuse gears
<b>Power Electronics</b>	Cooling devices, laminated busbars, fuses
<b>Maintenance and other services</b>	



A recognized player within the wind power market, Mersen services both OEM and replacement markets, with replacement markets (especially in US) constituting a major portion. Strong on customer relationship, the company has signed contacts with industry leaders including ABB, Vestas and ELIN Motoren, etc. Growth strategy adopted for wind energy includes strengthening its positions in the OEM market.

Hydro energy is another interest area within the renewable energy market, wherein its portfolio services include a range of customized services, along with efficient solutions in electrical, mechanical and sealing areas. The company's key hydro energy offerings include brush and brush holders for generators, slip rings, and carbon dust collection systems.

- 2. Electronics<sup>xxxix</sup>:** Mersen provides solutions to electronics industry for manufacturing semiconductors and for power conversion. As the market evolves toward energy efficient products, the demand for power electronics and low consumption energy components are rising remarkably. Here the company is mainly focused on high-end applications. Operating in both the segments of electronics market (upstream and downstream) and armed with the technological expertise, Mersen is well positioned across the semi-conductor manufacturing value chain. The company is equipped to provide high-grade and ultra-pure graphite for the manufacture of semiconductors to its clients, ensuring optimal efficiency of their products. The company provides custom-made power electronics components (sophisticated cooling, interconnection and protection systems) to equipment suppliers that are critical in optimizing the design of their power modules. These components are found primarily in speed drives for electric motors in industrial and service facilities, in transmission grid and energy distribution interconnections.

**Exhibit 15: Mersen’s Semiconductor Products<sup>xxxiv</sup>**

<b>Production of monocrystals</b>	Complex graphite components, furnace linings and ultra-pure carbon insulation equipment
<b>Active layer deposition</b>	Ultra-pure graphite wafer carriers
<b>Component encapsulation and welding</b>	High precision graphite and composite machined jigs

**Exhibit 16: Mersen’s Customers<sup>xxxv</sup>**

<b>Component manufacturers</b>

<b>OEMs</b>


Mersen has adopted a two-pronged growth strategy, whereby it looks to consolidate market position by banking on its strong relationship with equipment manufacturers on one hand, while on the other undertake investments to tap into the evolving semiconductors market, mainly in the US. Europe and Rest of the World are not a focus market, wherein investments have declined in 2015.

Mersen’s growth strategy also includes increasing the production of Silicon Carbide where it is well positioned with the main producers of silicon carbide monocrystals such as Cree Research and SiCrystal. SiCrystal is also involved in the production of other kinds of monocrystals, such as gallium arsenide and calcium fluoride, for which the company received large orders in 2015.

**3. Chemicals and pharmaceuticals<sup>xxxvi</sup>:** A leading company in the anticorrosion industrial equipment space, Mersen holds considerable expertise in chemical processes, thermal and mechanical design, corrosion and materials, welding and manufacturing processes. Mersen supplies an extensive range of custom made graphite and reactive metals equipment to meet the needs of several industries including construction, auto, agrochemicals and pharmaceuticals.

**Exhibit 17: Mersen’s Chemical and Pharmaceutical Industry Offerings<sup>xxxvii</sup>**

<b>Customized graphite and reactive metal equipment</b>	Heat exchangers, columns, reactors
<b>Pre-assembled systems</b>	Combination of synthesis units, columns and heat exchangers

**Exhibit 18: Mersen’s Customers<sup>xxxviii</sup>**

<b>Chemicals</b>

<b>API</b>


The chemicals industry, however, has witnessed a slowdown since 2014 across geographies, because unfavorable economic environment around the world. The market sluggishness has translated into a slowdown in sales of new integrated equipment for Mersen impacting overall performance in the segment. Orders in the industry are primarily driven by new capex investments, especially by the corrosive chemicals manufacturers, and maintenance services. The company received few notable orders in this space during 2015 such as a contract with a European company for the supply turnkey system for the synthesis of liquid hydrochloric acid, and orders for heat exchangers in Morocco and China. In addition, Mersen also received large orders from the growing specialty chemicals sector (herbicides, food additives and paint). Fertilizers within this space continued to remain a significant market for the company, as the market grew in Middle East and Africa, while it slowed in Asia, particularly in China.

**4. Transportation<sup>xxxix</sup>:** Mersen solutions in the transportation industry are focused toward rail, air and space segment. The company’s solutions and services are geared toward enhancing efficiency, reliability, and safety of electrical systems, wherein it provides equipment catering to both rail infrastructure and rolling stock. In air

transport, the company is focused on providing advanced components that can withstand extreme environments, while in the space segment the emphasis is toward supplying silicon carbide mirrors and structures for telescopes.

Rising demand for mass transit solutions, primarily in the emerging markets of China and India, resulted in transportation industry offering brisk business for Mersen during 2015. In the past year, the company received orders to supply several international rail projects, such as Hawaii, Riyadh (Saudi Arabia), Kochi (India), the subway systems in Honolulu and a suburban train system renewal contract in South Africa. Mersen also signed a contract for the Dubai subway system (United Arab Emirates) with Bombardier and Kinki Sharyo. Similarly, the group did well in the air transportation segment too. In 2015, the group continued to make efforts to increase its market share in the segment. In 2015, Mersen worked with subcontractors supplying products to industry majors such as Airbus, Boeing, Bombardier and Embraer, providing components such as refractories, bus bars, carbon brushes and many more products. In the space segment, the company received subcontracting orders from Airbus Defense and Space for the Euclid, IASI-NG, Sentinel 2C and 2D projects. Transportation industry, presently contributes 16% (H1 2016) to the company’s sales; albeit it is a fast-growing segment.

<b>Power distribution</b>	Current collectors, fuses, surge protection devices
<b>Energy supply</b>	Brushes, coolers, laminated busbars
<b>Abrasion resistant products</b>	Refractory components
<b>Other components</b>	Sealing components, aerospace mechanical components, carbon brushes

<b>Rail</b>		
 中国铁建		
 the evolution of mobility		 Inspire the Next
<b>Aeronautics</b>		
		
		
<b>Space</b>		
		

**5. Process industries<sup>xlii</sup>:** In the Process industry, Mersen primarily serves companies operating in metallurgy, mining, cement production, and paper production through both its divisions, Advanced Material and Electrical Power. The company’s 2014 acquisition of Cirprotec enhanced its offerings within the surge protection devices, enabling Mersen to hold a significant presence in the market. However, the company’s business activities remained affected in 2015 and first half 2016 due to sluggish economic environment globally. The process industry, with 35% contribution to the topline in 2016, continued to remain the largest end-user market for Mersen.

**Exhibit 21: Markets served within Process Industry<sup>xliii</sup>**

<b>Metallurgy</b>	Electrical solutions for foundries and furnaces, hot and cold rolling mills and galvanic lines
<b>Cement</b>	Electrical solutions for DC motors, asynchronous motors with wound rotors, etc.
<b>Rubber and Plastics</b>	Solutions designed for specific operations (extrusion, injection, hot working, constant or variable speed, etc.)
<b>Mining</b>	Solutions designed for the optimal performance of power shovels, draglines, loaders, dump trucks, underground equipment, etc.
<b>Pulp and Paper</b>	High-performance electrical solutions (for pulping machines, winders, rollers, driers, etc.), and mechanical and sealing solutions (for pumps and other systems)
<b>Assembly Manufacturing</b>	Optimized solutions and services for electrical rotating machines and power and signal transfer

## 2.4 Financial Overview<sup>xliv</sup>

Mersen reported a 6.4% YoY increase in the topline at € 412.0 MM in H1 2017 as compared to € 387.2 MM sales in H1 2016, by higher volume and significant productivity gains etc. Operating margin before non-recurring items improved to 8.9% during H1 2017 compared to 7.7% delivered in first-half 2016. For Advanced Materials, the parameter grew to 11.1% in H1 2017 from 7.9% in H1 2016 driven by higher volume and significant productivity gains. However, for Electrical Power, the parameter declined from 11.5% in H1 2016 to 10.3% in H1 2017 due to unfavorable mix effects, pricing pressure and limited gain from competitiveness plans.

Growth in net income from € 12.3 MM in H1 2016 to € 19.1 MM in H1 2017 driven primarily from more than 31% growth in operating sales due improved top-line.

Further, the operational excellence plan incurred a cost of € 22 MM in 2016 and is expected to entail a cost of € 10 MM in 2017 and deliver € 42-45 MM in savings to the company over the period of 2016-18 with € 16.5 MM already achieved in 2016.

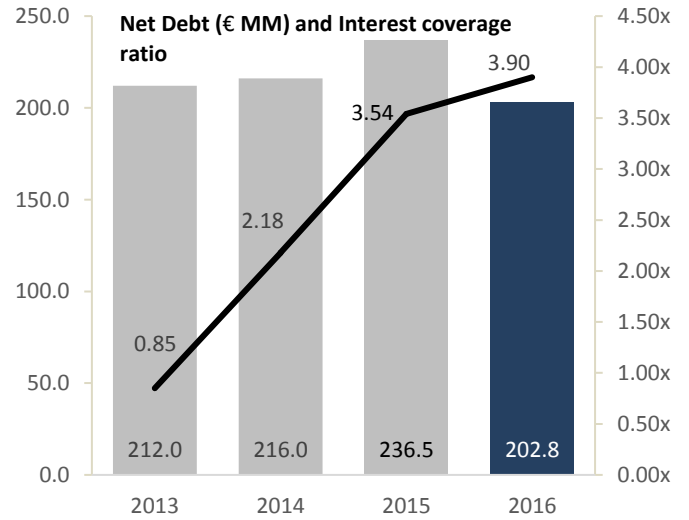
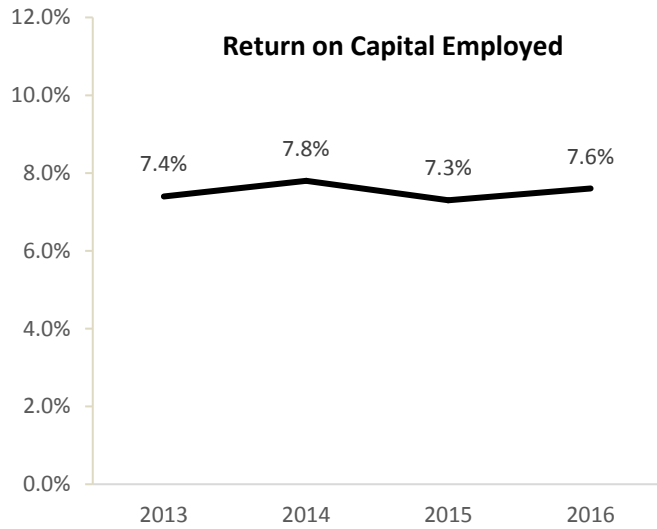
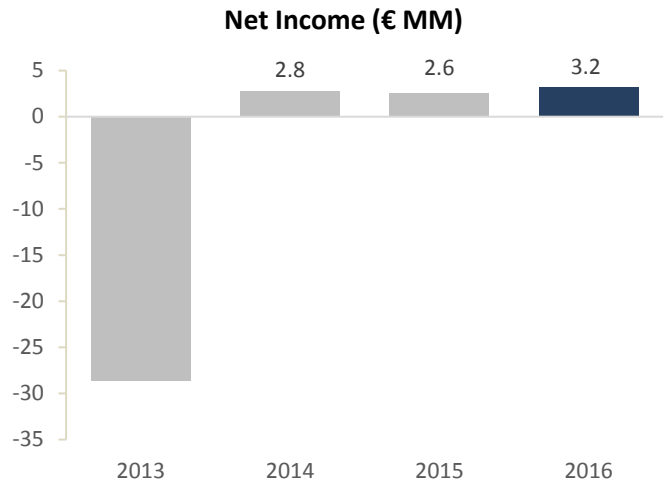
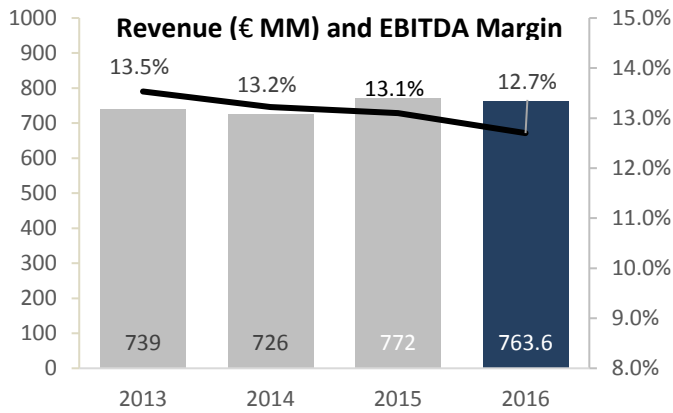
By market, process industries contributed the largest portion of revenue at 35.0% (35.0% in H1 2016) followed by energy sector at 19.0% (20.0% in H1 2016), electronics sector at 19.0% (18.0% in H1 2016), transportation sector at 17.0% (16.0% in H1 2016), and chemicals sector at 10.0% (11.0% in H1 2016).

By region, Mersen generated 35% (36.0% in H1 2016) of its revenues from North America, 33% (35.0% in H1 2016) from Europe, 27% (24.0% in H1 2016) from Asia and 4% (5.0% in H1 2016) from South America and Africa. Strong organic sales growth of 18.7% in Asia-Pacific region was driven by dynamic situation in India, China and Japan driven by Company's positioning in the renewable energies, electronics and process industries. European region showed an improvement in H1 2017 due to solid performance in aeronautics, chemicals and power electronics. North American region also witnessed slight improvement due to growth in electronics, oil & gas and process industries.

Mersen has a strong balance sheet, which can support the company's future growth and investments comfortably. Its net Debt to EBITDA ration came down to 1.8 at end of H1 2017 from 2.2 in H1 2016. Net debt overall decreased as of June 30, 2017, to € 197MM from € 203MM as of December 31, 2016. The Net debt to equity ratio stood at 42% in H1 2017 vis-à-vis 46% in H1 2016. Also, by end of June 30, 2017, Mersen strengthen its balance sheet by having access to additional credit facilities and borrowing totaling close to € 392.0 million, of which only 41% is used.



**Exhibit 22: Financial snapshot<sup>xlv</sup>**





## 2.5 Company Premiums<sup>xlvi</sup>

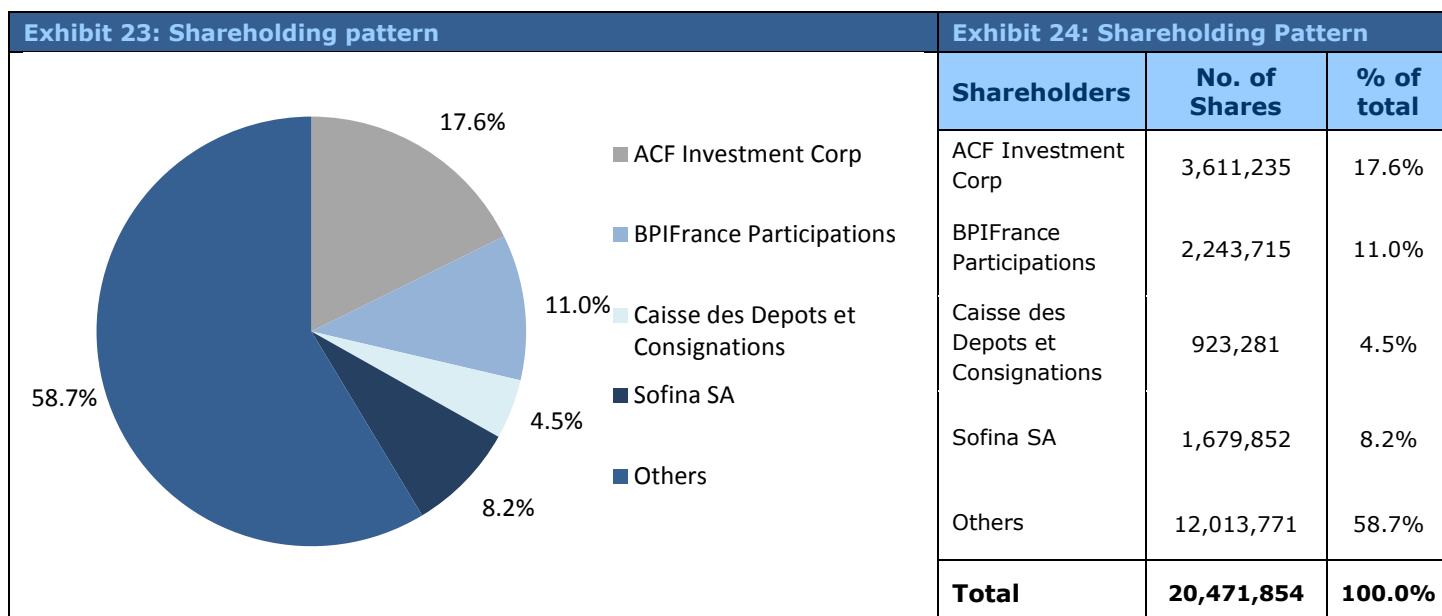
- 1. Diversified geographic presence:** Mersen has a strong international presence with operations in 35 countries globally, through its subsidiaries, affiliates and representative offices. The company's strategy of setting up localized production facilities for higher productivity and efficiency, combined with a widely-distributed customer base will bring about economies of scale and improve margins. A better geographic spread also provides Mersen stability and growth in situations of adverse economic conditions in a market or economy. Major markets where the company has exposure includes North America (36% of revenue), Europe (34%), Asia (25%) and South America and Africa (5%).
- 2. Focus toward customer service:** Mersen operates 56 facilities across five continents. This enables the company to stay close to its customer base and provide the timely services, which in turn enhances Mersen's brand image. In addition, the company operates 12 R&D centers around the world (four in the US, seven in Europe and one in China), which allows it to stay close to customers and develop new products and solutions, which are more aligned with their needs. Localized operations increase the competitiveness of Mersen's products.
- 3. Strong product portfolio:** The company, by the virtue of its strong expertise in materials segment and knowledge of norms and standards in electrical segment, enjoys market leader or joint market leader position in several products. One of the important offerings of the company, isostatic graphite, has a complex production procedure which acts as an effective entry barrier and makes it difficult for new players to enter the market.
- 4. Focus on core business competencies:** Mersen completed its "Transform Plan" in 2015 under which it reallocated production within geographies, resized facilities. This has enabled the company to focus more on its core competencies and is expected to yield significant improvements going ahead.
- 5. Strong and diverse customer portfolio:** Mersen offers its solutions to several key markets such as energy, transportation, electronics, process, and chemicals and pharmaceuticals allowing for a strong and diverse customer base. The company's customer portfolio boasts of major names such as Airbus Defense and Space (one of the top 10 defense companies worldwide), Samsung, BASF (the largest chemical producer in the world), Bombardier (a Fortune 500 conglomerate), Hitachi, Holcim-Lafarge, Mitsubishi, Siemens, Schneider, Arcelor Mittal. Mersen is also the preferred supplier of graphite components to Applied Varian (a major supplier of ion implantation equipment used in the fabrication of semiconductor chips).

## 2.6 Company Risks<sup>xlvii</sup>

- 1. Customer base is sensitive to global economic cycles:** Mersen's primary customer base is constituted of clients from industries, which are considerably impacted by global economic conditions. For example, Processes industry, the company's largest revenue contributor predominantly serves oil and mineral extraction companies, cement producing companies, paper production and glassmaking. All these industries are impacted by economic cycles. Thus, a downturn in economic cycle can have an adverse impact on Mersen.
- 2. Intense competition:** Mersen operates in a highly competitive industry characterized by companies of varying sizes, with different companies specializing in different products, and different levels of financial resources. Mersen's key competitors include SGL Carbon SE, Toyo Tanso Co., Ltd., Tokai Carbon Co., Ltd., Morgan Advanced Materials plc, and Schunk GmbH & Co. KG under the Advanced Material segment. Under the Electrical Power segment, the company faces competition from Eaton/Bussmann, Inc. and Rogers Corporation.
- 3. Legal risks:** The company has certain pending legal proceedings against it in Canada and France. The civil proceedings initiated by Morgan Crucible Ltd. against Mersen Toronto, following the imposition of CAD 1 MM fine on the former for anti-trust practices is still in progress; there have been no new developments since 2007 in the same. Criminal proceedings initiated over an accident on April 7, 2010 at Mersen's site in Gennevilliers is still in progress.

## 2.7 Mersen’s Shareholding Pattern<sup>xlviii</sup>

As on September 18, 2017, the number of shares outstanding was 20,471,854.



## 2.8 Listing and Contact Details<sup>xlix</sup>

The ordinary shares of Mersen SA are listed on Euronext Paris (EPA) (Ticker: EPA: MRN, Date of Listing: July 27, 1989)

**Contacts:** Tour EQHO, 2 avenue Gambetta, La Défense Cedex, Paris, 10077 France

**E-mail ID:** dri@mersen.com

**Phone:** +33 1 46 91 54 19

### 3. Key Variable Analysis<sup>1</sup>

According to the new organization structure from 2016 onward, the operations of the company have been split into Advanced Materials segment and Electrical Power segment.

#### 3.1 Variable 1 – Revenue from Advanced Materials segment

The Advanced Material segment accounts for ~55% of the sales. Under the segment, Mersen offers products based on carbon and high performance materials, which can withstand extreme environments (including high temperatures and corrosion) and offers power transfer products such as carbon brushes, slip ring assemblies etc. Mersen holds market leadership position in graphite based anti-corrosion equipment and brushes and brush-holders for industrial electric motors. The company is also the second leading player worldwide in high temperature isostatic graphite applications. Mersen's future strategy for the segment is focused toward organic growth. Going ahead, we expect the growth in renewable energy and transport to make up for the slump in chemicals industry. Overall, we forecast the sales from Advanced Material segment to grow at a CAGR of 3.7%-4.0% between 2017-23.

Exhibit 25: Advanced Material segment							
In €MM	2017	2018	2019	2020	2021	2022	2023
Low Bracket	436.3	455.7	469.6	490.5	508.8	532.3	558.5
High Bracket	434.5	452.0	464.8	484.1	500.8	522.2	546.0

#### 3.2 Variable 2 – Revenue from Electrical Power segment

The Electrical Power segment accounts for ~46% of the sales. In this segment, Mersen deals in electrical solutions and services for power management (mainly for power electronics) and electrical protection and control. Mersen holds market leading position in the supply of passive power electronics components. The group is also the second largest supplier worldwide for industrial fuses. Mersen's growth strategy for the segment includes maximizing mature products as well as expanding on growth products through innovations and bolt-on acquisitions, mainly targeted in the solar and wind energy and electronics verticals. Going ahead, we expect the growth in electronics and energy segment to drive the growth in Electrical Power segment. Overall, we forecast the sales from Electrical Power segment to grow at a CAGR of 3.7%-4.0% between 2017-23.

Exhibit 26: Electrical Power segment							
In €MM	2017	2018	2019	2020	2021	2022	2023
Low Bracket	366.4	380.2	389.0	395.0	411.5	429.8	450.0
High Bracket	367.5	382.3	392.4	399.7	417.7	437.7	460.0

We have relatively maintained our forecast for FY 2017 at the same level as FY 2016 because of slow down in process industries.

## 4. News<sup>li</sup>

1. **Announced financial results for H1 2017:** On July 28, 2017, Mersen announced the half year results for 2017. For organic sales, the company reported an increase of 4.9% YoY with Electrical Power grew by 3.2% YoY and Advanced Materials grew by 6.2% YoY. For total sales of the Group, the growth was 6.4% YoY from € 387.2 MM in H1 2016 to € 412.0 MM with Electrical Power growth of 4.6% YoY from € 176.7 MM in H1 2016 to € 184.8 MM in H1 2017 and Advanced Materials grew by 7.9% YoY from € 210.5 MM in H1 2016 to € 227.2 MM in H1 2017. The operating margin before non-recurring items for the group stood at 8.9% in H1 2017 vis-a-vis 7.7% in H1 2016; for Advanced Materials, it was 11.1% in H1 2017 vis-à-vis 7.9% in H1 2016 while for Electrical Power it was 10.3% in H1 2017 vis-à-vis 11.5% in H1 2016. Net income grew from € 12.3 MM in H1 2016 to € 19.1 MM in H1 2017.
2. **Revision in 2017 guidance:** On July 19, 2017, the company has raised its full-year 2017 guidance and expects to report improvement in the topline and operating margin vis-à-vis the previous guidance.
3. **Strong Balance sheet and high cash flow:** Robust Balance sheet with improvement in net leverage ratio; net Debt to EBITDA ration came down to 1.8 at end of H1 2017 from 2.2 in H1 2016. Net debt overall decreased as of June 30, 2017, to € 197 MM from € 203 MM as of December 31, 2016. The Net debt to equity ratio stood at 42% in H1 2017 vis-à-vis 46% in H1 2016.
4. **Change of Board of Directors:** Mersen appointed two new independent board members, Olivier Legrain (Chairman) and Michel Crochon, was approved to replace Herve Couffin and Jean-Paul Jacamon, respectively.
5. **Dividend of €0.50 a share:** The Board of Directors will recommend to shareholders for approval of payment of a dividend equal to €0.50 per share at the next Annual General Meeting to be held on May 18, 2017. This would amount to a payout of 34% of net income from continuing operations before non-recurring items and related tax.
6. **Operational excellence plan:** On September 13, 2016, Mersen announced its intention to step up its operational excellence plan. The plan aims to reorganize the company's manufacturing units and is expected to improve competitiveness by reducing purchasing cost, lean manufacturing and reducing fixed cost. In 2016, the result was reduction in fixed cost by 5% and reduction in inventory by € 16 MM on like-for-like basis. The plan also entailed termination of 130 positions in France at the Pagny sur Moselle and Saint Bonnet de Mure sites. Overall the plan would generate a cost base reduction of € 42-45 MM by 2018 wherein cost saving of € 16.5 MM have been achieved in 2016. The overall cost, including employee benefits costs, is estimated at € 32 MM, out of which € 22 MM was recognized under non-recurring expenses in the Group's 2016 financial statements and the remaining € 10 MM will be incurred in 2017.
7. **Strengthened financial structure by diversifying financing and increasing the average maturity:** Mersen announced the placement of Schuldschein private loan amounting to € 60 MM. This transaction was done with an aim to diversify the sources of financing and increase the average maturity of the Group's financing which now stands at 4.5 years. More than € 180 MM is available to committed credit lines. Other transactions completed in 2016 include 1) In March 2016, introduction of a commercial paper program for a maximum amount of € 220 M. Leverage ratio as of June 2016 was 2.2.
8. **Mersen, a partner on PeruSAT-1 satellite project:** Mersen announced its contribution through expertise in advanced materials to the success of PeruSAT-1 satellite launched by Airbus Defense and Space. The structure and mirrors of its optical instrument were manufactured entirely in silicon carbide (SiC) by harnessing Mersen's expertise.
9. **Mersen wins a large order from Siemens linked to European Electricity Highway Project:** Siemens Energy Management for an HVDC (High Voltage Direct Current) project to develop electricity highways made a deal with Mersen worth close to € 7 MM. Mersen will supply the cooling devices, protecting the integrated power modules in the HVDC technology converter stations supplied by Siemens. HVDC technology is a power electronics technology used for long-distance power transmission. The deliveries of the order will be staggered over 2017 and 2018.
10. **Mersen entered a JV with Harbin Electric Carbon in China as part of Group's expansion strategy in Asia:** The joint venture which is structured mainly as a contribution of assets is set up to serve the Chinese rail market and will encompass the manufacture of graphite plates, brushes and pantograph strips for civil applications. Mersen will provide the joint venture with unrivalled expertise in the formulation of carbon brushes and in operational excellence. Mersen, which will own a majority interest in this joint venture, will be

able to leverage the Harbin brand, its product certification and its efficient manufacturing platform to step up the pace of its expansion. Over the next five years, the goal is for it to generate sales of around € 10 MM and increase its workforce to around one hundred employees.

- 11. Mersen strengthened position in semiconductor market through Calcarb Innovation:** Mersen launched next-generation insulation product in the Calcarb® range which delivers enhanced and still unmatched thermal conductivity and resilience for semiconductor manufacturing equipment. This new product launch will increase Mersen's market share with manufacturers of mono-crystal silicon- and compound-based semiconductors. Mersen generates sales of around €45 MM in the semiconductor manufacturing market and anticipates a compound annual growth rate of between 5% and 10% over the next few years.
- 12. Announced multi-year contract with Bombardier Transportation:** On July 18, 2016, Mersen announced signing of multi-year contract with Bombardier Transportation to supply cooling devices and laminated bus bars for the San Francisco BART project over a five-year period. This is the largest contract in Mersen's history.
- 13. Announced signing of partnership agreement with TransPod:** On May 19, 2016, Mersen announced signing of a partnership agreement with TransPod, the Canadian startup that is building the world's leading Hyperloop system to disrupt and redefine commercial transportation. Under the partnership, Mersen will provide cooling solutions to protect the power conversion equipment, enabling the capsule to travel at a speed of over 1,000 km/h in a vacuum tube.
- 14. Announced approval of its new governance framework:** On May 11, 2016, Mersen announced adoption of its new governance framework, wherein a Board of Directors will now lead the Group. Previously, Mersen's governance framework consisted of a Supervisory Board and a Management Board. Following the Annual General Meeting, the Board of Directors appointed Hervé Couffin as Chairman of the Board of Directors and Luc Themelin as Chief Executive Officer. It also adopted its Internal Rules.
- 15. Announced signing of contract for supply of structure and mirrors for optical instrument:** On April 21, 2016, Mersen announced signing of contract with Airbus Defense and Space for supply of structure and mirrors for the optical instrument for MicroCarb satellite. The € 1MM worth order stands as a testimony to Mersen's expertise in advanced materials.
- 16. Announced results for full year 2015:** On March 09, 2016, Mersen announced the results for year 2015. The company reported a 6.3% YoY increase in its revenue. However, the EBITDA margin declined to 12.7% in 2015 from 13.2% in 2014.
- 17. Announced signing of contract for supply of laser mirrors:** On February 23, 2016, Mersen announced signing of € 1.9MM order for supply of laser mirrors for a new generation of revolutionary scanners. These images are crucial for the supervision and documentation of a vast variety of high-precision environments. The order illustrates Mersen's ability to serve all sectors within the industry.
- 18. Announced change in its organizational structure:** On December 2, 2015, Mersen announced changes to its organizational structure based on the priorities set out in its development strategy. Under the new organization, Mersen created two uniform segments, namely Advanced Materials and Electrical Power. The reorganization will enable the group to optimize its industrial and human resources and align its businesses more effectively with the needs of its different markets.
- 19. Announced acquisition of ASP:** On June 24, 2015, Mersen announced signing of an agreement to acquire ASP, a Chinese leader specializing in overvoltage protection (surge protection devices). The acquisition was part of its strategy to expand the group's electrical segment in the overvoltage protection market. In February 2014, Mersen had acquired a majority stake in Cirprotec, which provided the group with a strong expertise in IEC standards.

## 5. Management and Governance<sup>lii</sup>

The Company has a team of experienced professionals with expertise in varied fields. These highly qualified professionals have been with the firm for a long time, signifying the stability of the firm's management. The management's focus is on improving profitability.

<b>Exhibit 27: Management Team</b>		
<b>Name</b>	<b>Designation</b>	<b>Background</b>
Luc Themelin	CEO	<ul style="list-style-type: none"> <li>• Luc Themelin holds a Ph.D. in ceramic material science.</li> <li>• He started his career in 1988 at Alliages Frites Metafram.</li> <li>• Associated with the company for over 23 years, Luc Themelin has held various positions and responsibilities at Mersen. He worked in the capacity of Chairman of the Management Board between August 2011 and May 2016. Following the change in governance, he was appointed as the CEO of the company in May 2016.</li> </ul>
Thomas Baumgartner	CFO	<ul style="list-style-type: none"> <li>• Thomas Baumgartner is a graduate in political studies from IEP school, Paris.</li> <li>• He began his career in 1996 at Credit Lyonnais.</li> <li>• Joining Mersen in 1999 as head of Financing and Treasury, Thomas was appointed as the CFO in March 2010; he further progressed to be a part of the company's management board in August 2011, and his term in office was renewed in May 2013 for another four years. He was a member of the</li> </ul>
Gilles Boisseau	Group VP, Electrical Power	<ul style="list-style-type: none"> <li>• Gilles Boisseau holds a Master of Advanced Study in Metallurgy from Université Paris VI.</li> <li>• Possessing 25 years of experience in the Electrical Power industry in France and globally; he has worked with leading companies like Ensival Moret, Schneider and Areva, before joining Mersen.</li> <li>• Gilles was appointed as the company's VP, Electrical Power in April 2015.</li> </ul>
Christophe Bommier	Group VP, Technology, Research, Innovation and Business Support	<ul style="list-style-type: none"> <li>• Christophe Bommier is a graduate from the Paris School of Physics and Chemistry.</li> <li>• Beginning his career with Pechiney as an R&amp;D engineer, he joined Mersen in 1989.</li> <li>• Christophe moved the ranks swiftly to become the Global VP, High Temperatures in 2010; further he was appointed to the management board of Mersen in August 2011, post which on December 31, 2015 he resigned as a part of the management board. Now he is a part of the management team.</li> </ul>
Thomas Farkas	Group VP, Strategy and M&A	<ul style="list-style-type: none"> <li>• Thomas Farkas is a graduate in Finance from HEC Paris.</li> <li>• Prior to joining Mersen, has worked with JP Morgan, Mars &amp; Co. and Estin and Co.; primarily focused on strategy consulting.</li> <li>• Associated with Mersen for more than 10 years, in his present role he is responsible for corporate strategy, M&amp;A, innovation and strategic marketing.</li> </ul>
Jean-Philippe Fournier	Group VP, Operational Excellence	<ul style="list-style-type: none"> <li>• Jean-Philippe Fournier holds a Master of Sciences, Operation Management from Ecole Centrale Paris.</li> <li>• Jean-Philippe possesses more than 25 years of industry experience in industrial operations (automotive, oil&amp; gas, electrical manufacturing), and has worked with leading companies like GE and Schneider prior to joining Mersen.</li> <li>• He joined Mersen in 2013 as the group's VP, Operational Excellence to lead the company's industrial strategy and implement lean management program across more than 60 production sites spread across 20 countries.</li> </ul>
Eric Guajioty	Group VP, Advanced Material	<ul style="list-style-type: none"> <li>• Eric Guajioty has done his finance &amp; strategy course from Ashridge Business School, along with couple of leadership programs from INSEAD and Harvard Business School Executive Education.</li> <li>• With more than 25 years of experience, Eric has played key roles such as Director, Performance, Transformation and Strategy in The Linde Group,</li> </ul>

		<p>along with holding leading positions with SGL Carbon.</p> <ul style="list-style-type: none"> <li>• Eric joined Mersen in December 2015 as the company's VP, Advanced Materials.</li> </ul>
Estelle Legrand	Group VP, Human Resources	<ul style="list-style-type: none"> <li>• Estelle Legrand holds specialization in Economics Laws from Montpellier University, post completing a degree in Business Law from Université Paris X Nanterre.</li> <li>• Prior to joining Mersen in September 2009, Estelle has worked with L'Oréal, Thomson Consumer Electronics and Alstom.</li> </ul>
Didier Muller	Group VP, Asia Region	<ul style="list-style-type: none"> <li>• Possessing a Master's degree in economic science, Didier Muller completed his graduation from the Rouen ESC business school.</li> <li>• In 1981, he started his career in a sales role; he joined Mersen in 1989.</li> <li>• He has headed several key leadership positions in Mersen before joining the management board in August 2011. As on December 31, 2015, Didier has resigned from the management board of Mersen. Currently, he is a part of the management team.</li> </ul>



## 6. Industry Outlook

Materials and Electric Power segment is characterized by its correlation to the macro-economic environment in its areas of operation. Mersen's key markets in H1 2017 were North America with 35% contribution to revenue; Europe was at 33%; followed by Asia at 27% and lastly a negligible 4% came in from South America and Africa. Therefore, we have considered macro-economic environment in which the company operates in addition to the geographic exposure.

### 6.1 Macro-economic overview

In 2015, the world continued to witness significant macro-economic headwinds to the global economic recovery. Worldwide economic growth remained sluggish in 2015, with GDP growth rate of 3.1% compared to IMF estimate of 3.5% at the start of the year. Once the engine of global growth, emerging market economies cracked under the pressure of lower demand from major economies, low commodity prices and shale revolution recording a decline in growth rates. Development in China slowed in 2015 because the shift of the economy to more balanced growth in industrial production and services. The global commodity prices weakened because uncertainty regarding the growth of the Chinese economy. This slowdown reverberated through the developed world leading to excess capacity and buildup of inventory in many developed nations, including the US and Japan.

Going ahead, the IMF is projecting a slow global GDP growth<sup>liii</sup>. After revising its forecast for global GDP growth downward in April 2016, the IMF further lowered its forecast for global GDP growth post BREXIT by 0.1pps for 2016 and 2017 to 3.1% and 3.4% respectively. Similar revisions were observed for many advanced economies. The GDP growth forecast for UK was revised lower by 0.2pps for 2016 and 0.9pps for 2017. The GDP growth forecast for US was revised lower by 0.2pps to 2.2% for 2016. The IMF cut Japan's GDP growth forecast by 0.2pps citing the post BREXIT strengthening of Japanese Yen. However, IMF has increased the same by 0.2pps for 2017. The outlook on emerging and developed economies remained broadly unchanged relative to April. China's growth forecast was revised 0.1pps upward to 6.6% for 2016.

**Exhibit 28: IMF GDP growth forecast<sup>liv</sup>**

	Projection (in %)		Revision (in pps)	
	2016	2017	2016	2017
US	2.2	2.5	-0.2	0
Canada	1.4	2.1	-0.1	0.2
Japan	0.3	0.1	-0.2	0.2
UK	1.7	1.3	-0.2	-0.9
Euro Area	1.6	1.4	0.1	-0.2
<b>Advanced Economies</b>	<b>1.8</b>	<b>1.8</b>	<b>-0.1</b>	<b>-0.2</b>
China	6.6	6.2	0.1	0
Brazil	-3.3	0.5	0.5	0.5
India	7.4	7.4	-0.1	-0.1
<b>Emerging and developing economies</b>	<b>4.1</b>	<b>4.6</b>	<b>0</b>	<b>0</b>

The global consumer expenditure was expected to grow by 3% in 2016 compared to 2.5% in 2015 driven by recovery in key emerging markets. Real consumer expenditure was expected to grow by 2-3% and 4.4%, respectively in developed countries and emerging economies in 2016. The labor market was expected to improve in developed economies with unemployment falling to 6.5% of the economically active population in 2016, down from 6.8% in 2015. The average annual household real disposable income in the developed economies was expected to grow by

1.2% YoY in 2016, slightly below the 1.3% growth in 2015. The increase in consumption expenditure was expected to act as a stimulant for industries leading to higher investment to enhance production. This would in turn create demand for the group offerings.

**6.2 Industry Environment**

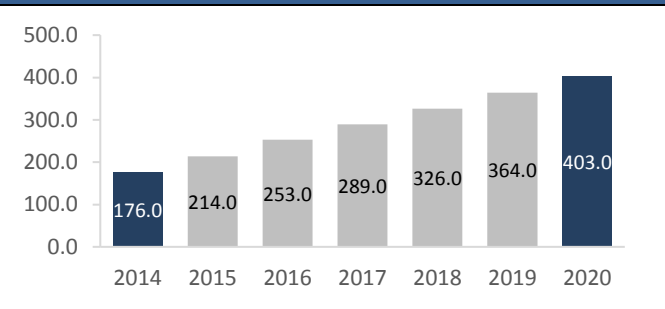
According to UNIDO, global manufacturing production rose merely 2.8% in 2015 as developing and emerging industrial economies registered low growth rates. Since the great financial crisis, which negatively impacted manufacturing growth of industrialized economies, emerging industrial economies have maintained relatively higher manufacturing production growth rates. However, this growth rate decelerated in 2015 because falling commodity prices and adverse conditions for external finances. The manufacturing value added (MVA) growth rate of developing and emerging industrial economies fell to 4.5% in 2015 from 5.4% YoY. In contrast, industrialized economies registered improvement in their growth performance driven by lower fuel prices and improved fiscal conditions. In 2015, the MVA of industrialized economies grew by 1.5%.

Going forward, manufacturers worldwide are refocusing on growth. The results of the Global Manufacturing Outlook Survey for 2016 conducted by KPMG showed that 74% of surveyed manufacturers reprioritized growth and 56% of the respondents were looking forward to enter new geographic markets. The survey also revealed that 49% of manufacturers are planning to invest more than 6% of their revenue on R&D over the next two years, while 34% have already invested at least 6% of their revenues on R&D.

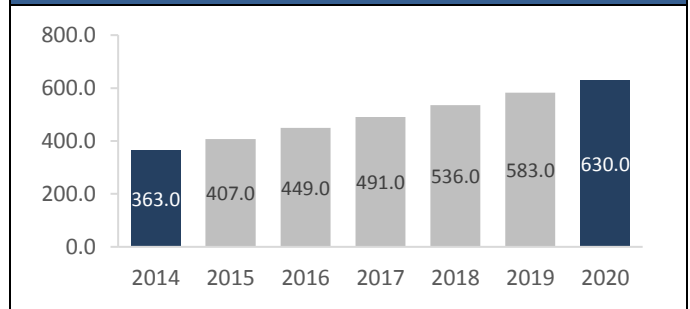
**6.2.1 Energy industry**

Globally, the world’s energy infrastructure is undergoing a massive transformation driven by rock bottom oil prices, shutdown of coal plants and flourishing solar industry (further boosted by the landmark Paris climate change deal and increasing interest in nuclear energy). Low oil price scenario is expected to continue in 2016 as well as demand from China declines, Paris climate change agreement gains more traction and an overall economic slowdown. Thus, oil and gas producers have cut down on costs and deferred approximately \$ 400BB in capital expenditure since the crude price collapse<sup>lv</sup>. However, on the other hand, investments have skyrocketed in the clean energy sector in 2015 being close to \$ 330BB, which is about six times more than in 2004. China, accounting for more than one-third of the investments is becoming an economy to reckon in this space. The COP21 (Paris Agreement) requires a fully decarbonized power system by 2050. This would provide further impetus to clean energy growth, as governments are implementing policies to deliver on commitments. The solar energy boom seen in 2015 is expected to continue with estimates from Bloomberg New Energy Finance for it to account for almost 35% of new power generation infrastructure being built out over the next 25 years<sup>lvi</sup>.

**Exhibit 29: Global solar energy capacity (in GW)<sup>lvii</sup>**



**Exhibit 30: Global wind energy capacity (in GW)<sup>lviii</sup>**



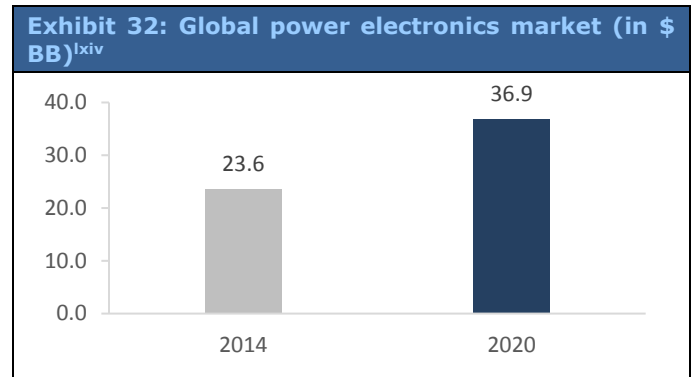
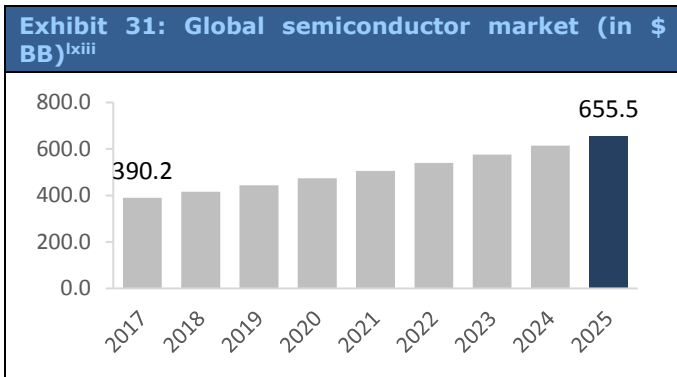
Wind energy, is another fast-growing area within the renewable energy sector where the Global Wind Energy Council (GWEC) projects wind power installations to double in the next five years. At the end of 2015, worldwide the total installed wind energy capacity was about 433 GW, with record 63 GW installations in 2015 itself, an increase of 22% over 2014. China held the lead in wind energy installations in 2015<sup>lix</sup>. China’s heightened interest in the renewable energy sector was clearly visible as it was the single country to with investments more than \$ 100BB into renewable projects during 2015. In addition to China, India is another key wind energy market in the Asian region. Apart from Asia, there other newer markets emerging across Africa, Asia and Latin America and will be major growth markets in the next decade. In Africa, South Africa is expected to lead the market alongside Egypt, Morocco, Ethiopia and Kenya. Brazil will continue to lead in Latin America, followed by Chile and Uruguay, and a potentially very large market is just now opening in Argentina.

**6.2.2 Electronics industry**

The semiconductor market has been rapidly evolving to meet the changing industry needs, where the shift is more toward complete system solutions rather than standalone components, as was previously. Presently, the growth in the global semiconductor market is driven by demand from electronics production where the market for smartphones, tablets, digital televisions, wireless communication infrastructure, network hardware, computers and electro-medical devices is growing at a rapid pace. New applications are being continuously developed for semiconductors driven by the need for better performance, reduced power consumption, lower costs and miniaturization.<sup>ix</sup> The shift is also toward non-silicon-based semiconductors as more of the new age applications focus on efficiency and power benefits.

World Semiconductor Trade Statistics (WSTS) estimated that the global semiconductor market will experience sluggish growth in 2016, and was expected to be at \$ 327.2BB, a 2.4% decline compared to 2015. Although WSTS estimates sales to pick modestly for semiconductor industry in 2017 and 2018 recording a growth of 2.0% and 2.2%, respectively. With semiconductor industry being driven ultimately by other end user markets, below are few areas in which it is likely to record strong performances.

- PricewaterhouseCoopers (PwC) expects the industrial semiconductor market to grow at a CAGR of 9.7% between 2014 and 2019.
- According to IC Insights, the global medical semiconductor sales is expected to grow at a CAGR of 12.3% to reach \$8.2 billion in 2018.<sup>ixi</sup>
- The Consumer Technology Association (CTA) expects US consumer technology (tablets, LCD TVs, Blu-ray players, smartphones, etc.) retail sales was expected to touch \$ 287BB in 2016.<sup>ixii</sup>
- The growth in cloud computing is increasing demand for dumber terminals that rely on cloud-based services and software. The demand for denser, energy efficient and secure data centers and networks, and more intelligent network control in this segment would boost the demand for semiconductors.



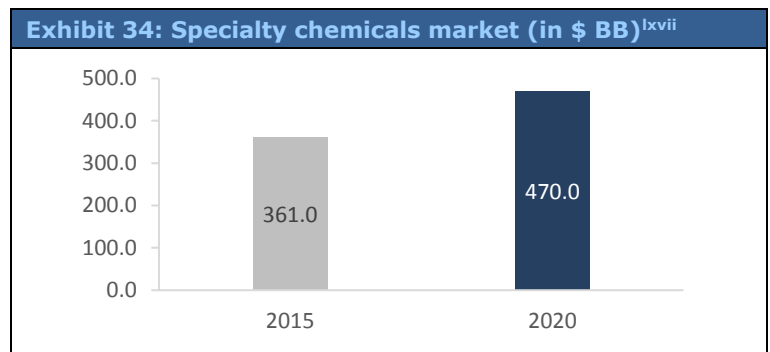
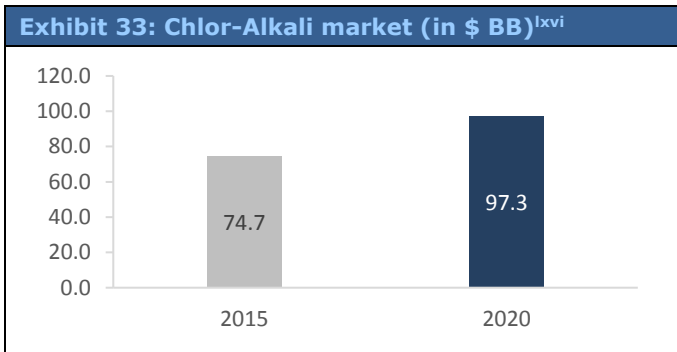
A high growth potential market, power electronics, which is at the core of semiconductor power devices, is estimated to touch \$ 36.9BB by 2020, growing at a CAGR of 7.7% from 2014-2020<sup>ixv</sup>. Demand for conversion of energy is increasing manifolds across industries, including IT, energy and transportation, which is ultimately driving the market for power electronics. For example, in transportation sector demand for electric and hybrid vehicles will drive sales, whereas in energy sector scale-up in renewable energy production, combined with smart-grid technology implementation, will lead to strong growth.

**6.2.3 Chemicals and pharmaceutical industry**

The global chemicals industry has been witnessing a shift in landscape as key user markets shift to emerging nations, representing almost half of the \$ 5TN market worldwide. In the recent period, Europe (which was the key chemical market till sometime back) has been experiencing decelerating growth. The situation is not quite rosy for the emerging market players as well, where the growth has been fluctuating for the past couple of years; although, Asia-Pacific continued to remain the industry leader, dominated by Japanese and Chinese chemical companies.

Worldwide chemical markets were expected to remain challenging in 2016 amid the competitive pressures, with key markets not expected to rebound in the short term. China expected to see a downtrend in demand for chemicals due to slower construction activity, whereas Japan was expected to record muted growth due to impact of a weak economic environment. The European markets might report little growth benefitting from the low oil price vis-à-vis its

US competitors, where production is based on gas. Demand in South American region was expected to be stagnant as well in 2016.



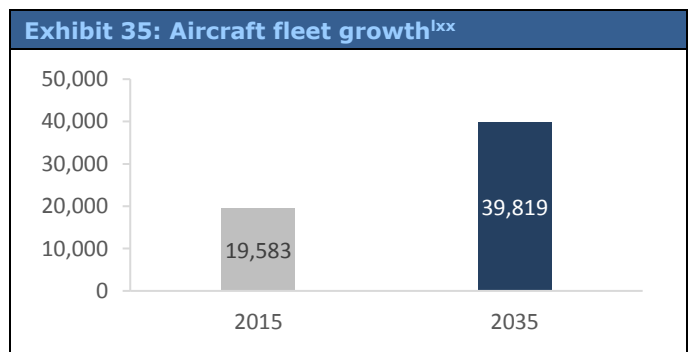
Pharmaceutical industry, on the other hand, is expected to perform relatively well compared to the chemicals market. Estimated to remain largely stable, the pharmaceutical market will be largely driven by customized medicine and increasing use of technology. The global prescription drug market was expected to reach \$ 770BB in 2016 from \$ 750BB in 2015, with a pick-up in growth. The global spending on pharmaceutical products is expected to reach \$ 1.4TN by 2020<sup>lxviii</sup>.

### 6.2.4 Transportation industry

Global aviation industry recorded modest growth despite a slowdown in economy worldwide driven by higher passenger traffic and benefits arising from lower fuel prices in 2015. According to a study by International Air Transport Association (IATA), the Middle East passenger airlines are forecasted to grow at a CAGR of 6.3% between 2013-17 and Asia-Pacific to grow at a CAGR of 5.7%. Demand from the growing middle class in Asia will help counter balance the lack of public investment by improving the business scenario for private deals. This is expected to drive total airport investments up from \$ 13.2BB to \$ 18.7BB between 2015 and 2025<sup>lxix</sup>.

Rail transportation grew by about 3% worldwide in 2015. The highest growth in the segment was recorded by Subways and good transportation markets at 5% and 6%, respectively. Driven by record equipment demand from China, growth was recorded in high-speed trains, after a period of slowdown. Going forward, demand for rail transportation is expected to be strong backed by growth in mature markets. For example, in Western Europe, mainly UK and Spain, where public transport is finding higher support, investments are likely to be undertaken in further developing high-speed networks. Increasing demand for public transportation and rising need for energy efficient transport mediums are driving the demand for rolling stock market (estimated to grow at a CAGR of 3.68% to \$ 58.6BB in 2021 from \$ 48.9BB in 2016). Based on technology, turbocharged locomotives to account for the highest share in rolling stock market, whereas in value terms Asia-Oceania to be the largest market in this segment, followed by Europe and North America.

Based on PwC 2015 Transportation report, the investments toward transport infrastructure is estimated to expand at a CAGR of about 5% globally during the period 2014-2025. Further, while Sub-Saharan Africa is projected to grow the fastest at 11%, increased investments to the tune of \$ 900BB per year in 2025 from the present \$ 557BB per year will ensure Asia-Pacific will remain the largest transport infrastructure market. The transportation market is to receive a boost from China’s ambitious “One Belt One Road” initiative, wherein it has shortlisted several high priority international mega infrastructure projects to allow for connectivity between China-Laos, China-Pakistan, China-Thailand and China-Russia. Western Europe is likely to continue its lackluster performance, with lower investments and longer recovery period<sup>lxxi</sup>.



### 6.2.5 Process industry

Year 2015 proved to be quite challenging for mining and oil extraction companies due to slowdown in Chinese market. China accounts for as much as 40%-50% of global commodity demand, and the decline in demand led to the plunge

in commodity and oil prices pressurizing the bottom-line of miners and energy companies. Oil companies are set to decrease their capital expenditures because low oil prices. A study by Wood Mackenzie<sup>lxxii</sup> estimates a \$ 125BB decline in capital expenditures in 48 states because of sharp retrenchment in drilling and steep decline in rig counts. The industry experts estimate Deepwater capex to decline until 2018<sup>lxxiii</sup>.

The situation is no different for metals and mining. Miners across metals and minerals firms are expected to focus on core operations, cost cutting, and capital discipline to improve their cost position and remain profitable during this prolonged period of low prices. The steel prices are expected to remain soft in 2016 due to low demand from China. However, the non-ferrous metals industry is expected to grow at a CAGR of 5% between 2016 and 2020 driven by growing demand for Aluminum. In terms of volume, the global copper market is forecasted to reach 38 million metric tons by 2020. The global lead market is expected to reach 15 million metric tons by 2020 and aluminum market is expected to reach 88.97 million metric tonne by 2020<sup>lxxiv</sup>.

### 6.3 Competition

There are various products offered by the players in the industry. The following table presents an overview of the main competitors of Mersen.

<b>Exhibit 36: Services offered by various players in the market</b>			
	<b>Advanced Materials Segment</b>	<b>Electrical Power Segment</b>	
Schunk	✓		A multinational manufacturing company with operations spread across 50 countries, Schunk is primarily based out of Germany and the US. The company's key offerings include Lathe Chunks, Tool holding systems, Pneumatic gripping systems, etc. Schunk is one of the main competitors of Mersen in supply of brushes, brush-holders, pantograph strips and isostatic graphite.
SGL Carbon	✓		SGL Carbon SE is one of the leading manufacturers of carbon products in the world. The company's offering ranges from carbon and graphite materials to carbon fibers and composites. SGL Carbon has 38 production sites globally, and service networks in over 100 countries.
Tokai Carbon	✓		Tokai Carbon Co. Ltd. is a Japanese company engaged in developing and stocking of graphite material for use in nuclear power. The company is one of the main competitors of Mersen in supply of isostatic graphite.
Toyo Tanso	✓		Toyo Tanso Co. Ltd. is engaged in manufacturing, processing and selling special graphite products, general carbon products, composite material and others. The company offerings include crucibles for single crystal silicon pulling furnaces, heaters, susceptors for metal organic chemical vapor deposition (MOCVD) devices, continuous casting dies and many more.
Aavid		✓	Aavid engineering is one of the largest design engineering and manufacturing corporation focused on thermal management solutions in the world. Aavid provides thermal solutions across all industries. The company is one of the main competitors of Mersen in cooling devices.
Dehn		✓	Dehn develops, produces and sells lightning protection and safety products. The company offerings include protective devices for installations in switchgears, meter panels, distribution cabinets, cable ducts, socket outlets, and terminal devices; surge protection products for bus systems and measuring and control technology, telecommunication and telephony, data networks and many more.
Eaton/Bussman		✓	Eaton Corporation is a power management company providing energy efficient solutions for management of electrical, hydraulic and mechanical power. The company develops and manufactures critical circuit protection, power management and electrical safety products. The company sells products in over 175 countries.
Lytron		✓	Lytron Inc. provides thermal management solutions. The company offerings include old plates, chassis, chillers, cooling systems, and heat exchangers and many more. Lytron is one of the main competitors of Mersen in cooling devices.
Methode		✓	Methode Electronics is engaged in designing, manufacturing and marketing of devices employing electrical, radio remote control, electronic, wireless and sensing technologies. Methode is a competitor of Mersen in supplying bus bars.

Morgan Advanced Material	✓		Morgan Advanced Material is an engineering company engaged in manufacturing of specialist products using carbon, advanced ceramics and composites. The company's offerings include insulating fibers, electrical carbon transfer systems, seals and bearings, ceramic cores, piezoelectric sensors, crucibles for metals processing and high technology composites.
Phoenix Contact		✓	Phoenix Contacts is a company engaged in manufacturing industrial automation, interconnection, and interface solutions. The company offerings include terminal blocks, relays, connectors, signal conditioners, power supplies, etc.
Rogers		✓	Rogers Corporation is engaged in designing, developing, manufacturing and selling of engineered materials and components for applications, including communications infrastructure, automotive, consumer electronics, and aerospace or defense. Rogers is a competitor of Mersen in supplying bus bars.

Note: The list of services may not be exhaustive. Additional services may be offered by the individual firms.

## Comparison with listed peers

Exhibit 37: Electrical Power segment <sup>(b)(3)</sup>					
Company Name	Market Cap.	EV	Revenue (Trailing 12 Months)	EBITDA (Trailing 12 Months)	EV/EBITDA
SGL Carbon SE	1,688	2,165	719	85	NM
Tokai Carbon Co Ltd	1,484	1,369	782	111	12.4x
Toyo Tanso Co Ltd	425	346	270	40	8.7x
Methode Electronics Inc	1,217	1,007	756	122	8.2x
Morgan Advanced Materials PLC	948	1,190	1,202	173	6.9x
Rogers Corp	1,918	1,931	682	142	13.6x
<b>Sum/Average</b>	<b>7,680</b>	<b>8,008</b>	<b>4,411</b>	<b>673</b>	<b>9.5x</b>



## 7. Valuation<sup>lxxvi</sup>

The Fair Market Value for all of the Company shares stands between € 728 MM and € 800 MM as of September 18, 2017. The Fair Market Value for one Company publicly traded share stands between € 35.58 and € 39.05 as of September 18, 2017 using blended valuation (Discounted Cash Flow and EV/EBITDA Multiple).

### 7.1 Discounted Cash Flow Method

#### Valuation

##### WACC

Risk-free rate	2.0% <sup>lxxvii</sup>
Beta	1.047 <sup>lxxviii</sup>
Market Return	6.0% <sup>lxxix</sup>
Country Risk Premium	0.3% <sup>lxxx</sup>
Cost of Equity	6.50%
Cost of Debt	3.24%
Terminal Growth Rate	1.8%
WACC (Discount Rate)	5.36%

Year Ending- Dec	2017E	2018E	2019E	2020E	2021E	2022E	2023E
<b>FCFF (High)</b>							
Net cash from operating activities	75	89	88	89	97	106	111
Capital Expenditure	(36)	(36)	(34)	(34)	(35)	(35)	(36)
Free Cash Flow to Firm	39	53	54	55	62	71	75
Discount factor	0.99	0.94	0.89	0.84	0.80	0.76	0.72
Present Value of FCFF	13	26	35	32	38	39	37
<b>FCFF (Low)</b>							
Net cash from operating activities	72	86	86	86	94	103	108
Capital Expenditure	(36)	(36)	(34)	(34)	(35)	(35)	(36)
Free Cash Flow to Firm	36	50	52	52	59	68	72
Discount factor	0.99	0.94	0.89	0.84	0.80	0.76	0.72
Present Value of FCFF	11	23	32	30	36	37	35

Arrowhead Fair Value Bracket	High	Low
Terminal Value (TV)	1,097	1,045
Present Value of TV	738	703
Present Value of FCF	220	204
<b>Equity Value Bracket</b>		
Shares O/s (000's)	20	20
<b>Fair Share Value Bracket (€)</b>		
	<b>37.17</b>	<b>34.71</b>
Current Market Price (€)	31.70	31.70
Upside/(Downside)	17.3%	9.5%
Current Market Cap. (€ '000) <sup>lxxxi</sup>	649	649
<b>Target Market Cap. Bracket (€ '000)</b>		
	761	711

### Approach for DCF Valuation

**Time Horizon:** The Arrowhead fair valuation for Mersen is based on a DCF method. The time period chosen for the valuation is 76 months (2017E-2023E).

**Terminal Value:** Terminal value is estimated using terminal growth rate of 1.8%.

**Prudential nature of valuation:** It should be noted that this Arrowhead Fair Value Bracket estimate is a relatively prudential estimate, as it discounts the eventuality of any new products being launched in the market or any significant change in the strategy.

**Key variables:** The upper and lower bounds in the estimation correspond to the extreme positions taken by the following key variables:

#### Variable 1 – Revenue from Advanced materials segment<sup>lxxxii</sup>

Exhibit 38: Advanced Material segment							
In €MM	2017	2018	2019	2020	2021	2022	2023
Low Bracket	434.5	452.0	464.8	484.1	500.8	522.2	546.0
High Bracket	436.3	455.7	469.6	490.5	508.8	532.3	558.5

#### Variable 2 – Revenue from Electrical power segment<sup>lxxxiii</sup>

Exhibit 39: Electrical Power segment							
In €MM	2017	2018	2019	2020	2021	2022	2023
Low Bracket	366.4	380.2	389.0	395.0	411.5	429.8	450.0
High Bracket	367.5	382.3	392.4	399.7	417.7	437.7	460.0

## 7.2 Relative Valuation Method

The Fair Market Value of one of Mersen's publicly traded regular shares stands between € 36.46 and € 40.94 as on September 18, 2017 according to relative valuation method.

### Exhibit 40: Relative Valuation Method

Company Name	Market Cap (in € MM)	Current Enterprise Value (in € MM)	EBITDA (Trailing 12 Months) (in € MM)	EV/EBITDA (Trailing 12 Months) (in € MM)
SGL Carbon SE	1,688	2,165	85	NM
Tokai Carbon Co Ltd	1,484	1,369	111	12.4
Toyo Tanso Co Ltd	425	346	40	8.7
Methode Electronics Inc	1,217	1,007	122	8.2
Morgan Advanced Materials PLC	948	1,190	173	6.9
Rogers Corp	1,918	1,931	142	13.6
<b>Average</b>				<b>9.5x</b>

All figures are in € MM except per share data

Relative Valuation (All figures are in € MM except per share data)		
	High	Low
Mersen EBITDA FY2023 (€ MM)	151.9	138.4
PEER EV/ EBITDA	9.5	9.5
Enterprise Value (EV) FY2023 (€ MM)	1,437.3	1,309.9
PV of FY2023 EV	<b>1,035</b>	<b>944</b>
Adjustment		
Less: Debt (Net cash)	197.2	197.2
<b>Implied Equity Value</b>	<b>838</b>	<b>746</b>
Shares o/s ('000s)	20.5	20.5
<b>Intrinsic Value per share</b>	<b>40.94</b>	<b>36.46</b>
Current market Price	31.70	31.70
Upside / (Downside)	29.1%	15.0%

## 7.3 Blended Valuation

The Fair Market Value of one of Mersen's publicly traded regular shares stands between € 35.58 and € 39.05 as on September 18, 2017 according to blended valuation method.

Exhibit 41: Blended Valuation		
	High	Low
DCF	37.17	34.71
Relative Valuation	40.94	36.46
<b>Blended Value</b>	<b>39.05</b>	<b>35.58</b>

### **Important information on Arrowhead methodology**

The principles of the valuation methodology employed by Arrowhead BID are variable to a certain extent depending on the subsectors in which the research is conducted, but all Arrowhead valuation research possesses an underlying set of common principles and a generally common quantitative process.

With Arrowhead Commercial and Technical Due Diligence, Arrowhead extensively researches the fundamentals, assets and liabilities of a Company, and builds solid estimates for revenue and expenditure over a coherently determined forecast period.

Elements of past performance, such as price/earnings ratios, indicated as applicable, are present mainly for reference purposes. Still, elements of real-world past performance enter the valuation through their impact on the commercial and technical due diligence.

Elements of comparison, such as multiple analyses may be to some limited extent integrated in the valuation on a project-by-project or asset-by-asset basis. In the case of this Mersen report, we have integrated relative valuation in the valuation along with DCF.

### **Arrowhead BID Fair Market Value Bracket**

The Arrowhead Fair Market Value is given as a bracket. This is based on quantitative key variable analysis, such as key price analysis for revenue and cost drivers or analysis and discounts on revenue estimates for projects, especially relevant to those projects estimated to provide revenue near the end of the chosen forecast period. Low and high estimates for key variables are produced as a tool for valuation. The high-bracket DCF valuation is derived from the high-bracket key variables, while the low-bracket DCF valuation is based on the low-bracket key variables.

In principle, an investor who is comfortable with the high-brackets of our key variable analysis will align with the high-bracket in the Arrowhead Fair Value Bracket, and likewise in terms of low estimates. The investor will also take into account the Company intangibles – as presented in the first few pages of this document in the analysis on strengths and weaknesses and other essential Company information. These intangibles serve as supplementary decision factors for adding or subtracting a premium in the investor's own analysis.

The bracket should be understood as a tool provided by Arrowhead BID for the reader of this report and the reader should not solely rely on this information to make his decision on any particular security. The reader must also understand that on one hand, global capital markets contain inefficiencies, especially in terms of information, and that on the other hand, corporations and their commercial and technical positions evolve rapidly: this present edition of the Arrowhead valuation is for a short to medium-term alignment analysis (one to twelve months). The reader should refer to important disclosures on page 33 of this report.

## 8. Appendix

### 8.1 Mersen's Financial Summary

<b>Exhibit 42: Financial Summary</b>		<i>Low Bracket Estimates</i>					
<i>Year Ending Dec</i>	<b>2017E</b>	<b>2018E</b>	<b>2019E</b>	<b>2020E</b>	<b>2021E</b>	<b>2022E</b>	<b>2023E</b>
Revenue (€ MM)	801	832	854	879	912	952	996
Operating Profit (€ MM)	54	74	78	83	92	101	110
Net Income (€ MM)	20	37	40	45	51	59	66
EPS	0.95	1.75	1.89	2.08	2.41	2.75	3.09
<b>Growth rates (%)</b>							
Revenue	4.9%	3.9%	2.6%	3.0%	3.8%	4.3%	4.6%
Operating Profit	66.2%	38.3%	5.0%	6.8%	10.7%	9.9%	8.9%
<b>Margins (%)</b>							
Gross Margins (%)	29.5%	29.5%	30.0%	30.5%	31.0%	31.5%	31.5%
Operating Profit Margin	8.7%	9.5%	9.6%	9.9%	10.5%	11.0%	11.4%
Net Profit Margin	2.5%	4.5%	4.7%	5.1%	5.6%	6.2%	6.6%
<b>Ratios</b>							
ROA	2.0%	3.7%	4.0%	4.4%	5.0%	5.6%	6.3%
ROE	4.1%	7.3%	7.7%	8.2%	9.2%	10.1%	10.9%
Debt/Equity	0.44x	0.42x	0.40x	0.38x	0.34x	0.31x	0.27x
Interest Coverage	5.19x	7.34x	7.96x	8.71x	10.14x	12.06x	14.31x

<b>Exhibit 43: Financial Summary</b>		<i>High Bracket Estimates</i>					
<i>Year Ending Dec</i>	<b>2017E</b>	<b>2018E</b>	<b>2019E</b>	<b>2020E</b>	<b>2021E</b>	<b>2022E</b>	<b>2023E</b>
Revenue (€ MM)	804	838	862	890	927	970	1,018
Operating Profit (€ MM)	57	78	81	87	96	105	114
Net Income (€ MM)	23	40	43	47	54	61	68
EPS	1.06	1.87	2.00	2.21	2.55	2.88	3.20
<b>Growth rates (%)</b>							
Revenue	5.3%	4.3%	2.9%	3.3%	4.1%	4.7%	5.0%
Operating Profit	77.0%	36.8%	4.1%	7.0%	10.9%	9.1%	8.2%
<b>Margins (%)</b>							
Gross Margins (%)	30.0%	30.0%	30.5%	31.0%	31.5%	32.0%	32.0%
Operating Profit Margin	9.1%	9.9%	9.9%	10.2%	10.8%	11.2%	11.5%
Net Profit Margin	2.8%	4.8%	5.0%	5.3%	5.9%	6.3%	6.7%
<b>Ratios</b>							
ROA	2.3%	4.0%	4.2%	4.6%	5.2%	5.8%	6.4%
ROE	4.6%	7.8%	8.1%	8.6%	9.6%	10.4%	11.1%
Debt/Equity	0.44x	0.42x	0.39x	0.37x	0.34x	0.30x	0.26x
Interest Coverage	5.52x	7.72x	8.30x	9.10x	10.61x	12.53x	14.78x

## 8.2 Mersen's Balance Sheet Forecast

**Exhibit 44:  
Consolidated  
Balance Sheet**

All figures in € MM, unless stated differently

*Low Bracket estimates*

Year Ending-Dec	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Total current assets	344	355	368	383	396	404	415
Total non-current assets	655	650	646	644	643	643	645
<b>TOTAL ASSETS</b>	<b>1,000</b>	<b>1,005</b>	<b>1,014</b>	<b>1,027</b>	<b>1,039</b>	<b>1,047</b>	<b>1,060</b>
Total current liabilities	242	239	238	238	236	233	230
Total non-current liabilities	255	249	244	240	233	223	212
<b>TOTAL LIABILITIES</b>	<b>497</b>	<b>488</b>	<b>482</b>	<b>478</b>	<b>470</b>	<b>456</b>	<b>442</b>
Total shareholder's equity	503	517	532	549	569	592	618
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>1,000</b>	<b>1,005</b>	<b>1,014</b>	<b>1,027</b>	<b>1,039</b>	<b>1,047</b>	<b>1,060</b>

**Exhibit 45:  
Consolidated  
Balance Sheet**

All figures in € MM, unless stated differently

*High Bracket estimates*

Year Ending-Dec	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Total current assets	347	359	373	390	404	414	426
Total non-current assets	655	650	646	644	643	643	645
<b>TOTAL ASSETS</b>	<b>1,002</b>	<b>1,009</b>	<b>1,019</b>	<b>1,034</b>	<b>1,047</b>	<b>1,057</b>	<b>1,071</b>
Total current liabilities	242	239	238	238	236	233	230
Total non-current liabilities	255	249	244	240	233	223	212
<b>TOTAL LIABILITIES</b>	<b>497</b>	<b>488</b>	<b>482</b>	<b>478</b>	<b>470</b>	<b>456</b>	<b>442</b>
Total shareholder's equity	505	521	537	556	577	601	629
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>1,002</b>	<b>1,009</b>	<b>1,019</b>	<b>1,034</b>	<b>1,047</b>	<b>1,057</b>	<b>1,071</b>

## 9. Analyst Certifications

I, Parvati Rai, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject Company, based on the collection and analysis of public information and public Company disclosures.

I, Sumit Wadhwa, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject Company, based on the collection and analysis of public information and public Company disclosures.

### Important disclosures

Arrowhead Business and Investment Decisions, LLC received fees in 2015 and 2016 and will receive fees in 2016 from Mersen SA for researching and drafting this report and for a series of other services to Mersen SA, including distribution of this report and investor relations services. Neither Arrowhead BID nor any of its principals or employees owns any long or short positions in Mersen. Arrowhead BID's principals have a mandate for investment banking services from Mersen and expect to receive compensation for investment banking activities for Mersen in 2016.

Aside from certain reports published on a periodic basis, the large majority of reports are published by Arrowhead BID at irregular intervals as appropriate in the analyst's judgment.

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Investors are advised to gather and consult multiple sources of information while preparing their investment decisions. Recipients of this report are strongly advised to read the Information on Arrowhead Methodology section of this report to understand if and how the Arrowhead Due Diligence and Arrowhead Fair Value Bracket integrate alongside the rest of their stream of information and within their decision-making process.

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## 10. Notes and References

- i 52 weeks to September 15, 2017. Source: Bloomberg, September 18, 2017
- ii 3 months to September 15, 2017. Source: Bloomberg, September 18, 2017
- iii Source: Company H1 2017 Financial Results
- iv Source: Company FY 2015, FY 2016 and H1 2017 Reference report
- v Arrowhead Business and Investment Decisions Fair Value Bracket – AFVBTM. See information on valuation on pages 24-27 of this report and important disclosures on page 32 of this report
- vi Source: Company FY 2015, FY 2016 and H1 2017 Reference report
- vii Source: Company FY 2015, FY 2016 and H1 2017 Reference report
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- ix Source: Company FY 2015, FY 2016 and H1 2017 Financial Results
- x Source: Arrowhead BID Research
- xi Source: <http://www.imf.org/external/pubs/ft/weo/2015/update/01/>
- xii Source: <http://www.unido.org/news/press/global-manufacturing-increased-modestly-in-2015-as-growth-slowed-in-developing-and-emerging-industrial-economies-unido-report.html>
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- li Source: Company website and financial reports
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- liii Source: <http://www.imf.org/en/News/Articles/2016/07/18/18/11/NA07192016-IMF-Cuts-Global-Growth-Forecasts-on-Brexit-Warns-of-Risks-to-Outlook>
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